



PERGOLA®

OPERA & VISION

INTRODUCTION


Revised 9/22/17



PRODUCT FEATURES:

- ☐ Self Supporting / Free standing or wall mounted.
- ☐ Compact gutter design louvered Pergola structure.
- ☐ Opera offers integrated optional roller zipper screens built into the 12" high gutter.
- ☐ Protects against sun & rain.
- ☐ Keeps deck and patio cool.
- ☐ Can cover small to larger patio areas
- ☐ Great for restaurant dining areas and large residential patios.
- ☐ All aluminum frame.
- ☐ Motorization required.
- ☐ Integrated gutter for water drainage for better appearance and drainage through posts.

Pergola® Opera & Vision are unique modern self-supporting free standing metal louvered structures that can also be wall mounted offering the comfort and durability of a stationary framework, with movable metal louvered roof slats that can be opened or closed as needed. The Opera model offers optional integrated roll down zipper screens with mesh or clear windows which are built into the low-profile gutter design. This Pergola® system is great for restaurant and residential patio areas. Larger widths can be covered by coupling multiple frames together and integrating the gutters and posts.

| MODEL: <u>OPERA & VISION</u> | Standard Frame Colors | Standard Widths | Standard Projections | Recommend Application | Options |
|---|---|--|---|--|--|
|  | <p>See next page for standard colors.</p> <p>Custom colors also available</p> | <p>Max 14' 9" wide 450 cm</p> <p>Add sections to make unit wider</p> | <p><u>Opera</u> up to 600 cm / 19' 8"</p> <p><u>Vision</u> 590 cm / 19' 4" w / 4 posts</p> <p>Add sections to make proj. larger</p> | <p>Restaurants, & Large Residential Patios</p> | <p>Integrated zipper roll Screens (Opera)</p> <p>Heaters & LED Lights (Both)</p> |

1. General

The Pergola® **OPERA & VISION** terrace awning is designed for restaurants, cafes, and large residential terraces. Optional integrated “Raso” zipper screens are available on all four (4) sides with mesh fabric or widows for the Opera model. The integrated gutter system channels water to the sides and down the posts, away from the covered area. The posts are the actual downspout. The Louvered slats open and close by means of a 24 volt motor. Multiple units can be configured together to cover larger areas. Maximum size per OPERA section with 4 posts is 14’ 9” wide x 19’ 8” projection (450 cm x 600 cm). Maximum size for VISION is 14’ 9” wide x 19’ 4” projection (450 cm x 590 cm). The metal louvered slats are 20 cm wide, so available projection will be in increments of 20 cm (7.87"), and would be increased or reduced in increments of 20 cm.

2. The fabric (screens)

For optional OPERA “Raso” side screens Ferrari Preconstraint 602 or Soltis 86 mesh fabric is used.

3. Motor

The Pergola® Opera & Vision louvers are operated by a “Linear Actuator” 24 volt motor with transformer and a remote control. The optional Opera “Raso” screens are operated by a Somfy LT50 Altus 110 volt radio remote motor. Somfy electronic controls are available as an option. Electrical wiring and connections within the unit is the responsibility of customer to meet code.

4. Manual A Manual version is not available.

FRAME STRUCTURE COLORS

Standard / No upcharge / with standard lead time:

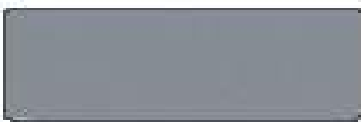


WHITE RAL 9010



IRON GREY

Standard / No upcharge / with longer lead time than standard:

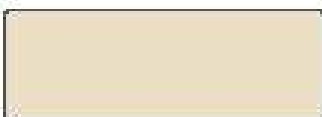


GREY RAL 9006

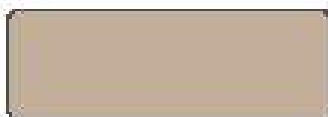


CORTEN

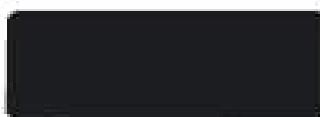
OPTIONAL / with upcharge / with longer lead time than standard:



IVORY RAL 1013



RAL 7006 MATT



RAL 7016



RAL OTHER

ELECTRICAL WIRING:

Electrical wiring and connections: Please note that the OPERA & VISION are NOT U.L approved or certified as complete electrical component. The individual structure 24 volt Louver motor, LED lighting and any screen motors come with internal wiring. It is up to the buyer / customer to certify the Sunair / Pratic supplied wiring meets local codes where the system is installed. Heater wires and cabling is not included and will need to be wired externally to the gutter system by customer. Customer may need to hire a UL inspector to inspect the system locally at customers expense.

OPERA & VISION

ADVANTAGES

The OPERA & VISION can be wall mounted or free standing structures. The supporting profile and guides are 12 ½" high (32 cm). Posts are 15 cm x 15 cm (Foot plate is wider).

Water management within the gutter system and discharge within the posts is a Pratic patent. Optional telescoping post feet are available for ease of installation.

For greater perimeter protection, the OPERA model can be configured with optional retractable RASO zipper screens hidden within the beam system.



The OPERA & VISION offer more pre-assembled structure components for a safer and easier installation on site.

The OPERA & VISION RGB LED multi colored lighting offers a fascinating elegant remote controlled lighting option (White lights included).

OPERA & VISION is a solid, made to measure structure that can reach large sizes (14'9" x 19'8"). Coupling of multiple structures to make larger sizes is possible with common posts.

Pergola® Model: OPERA & VISION



OPERA & VISION pictures cont.



OPERA & VISION MORE FEATURES / PATENTS.

ALUMINUM



The Bioclimatic Pergola Opera / Vision, and Rialto screens are made of all extruded aluminum profiles.

STAINLESS



Brackets, pins, plates, and screws of the entire line are made of 304 & 470 stainless steel. These alloys are recognized to resist rusting.

PATENTS



Pratic filed 6 patents that protect the technical and functional characteristics of the bioclimatic Pergola®, patents that guarantee the uniqueness and quality of the Opera and Vision models along with the Raso screens.

WATER TEST



Opera, Vision, have been tested to see how waterproof they are by the "Giordano Institute" which simulated rain equal to 369 m/hour with a pressure of 3.4 bars during an unidentified time for an Opera unit (14' 9" wide x 19' 8" projection) or (450 cm wide x 600 cm projection) with two rain events or downpours.

FINISHES & PAINTING



In the coating process the aluminum profiles and steel components are subjected to a special "pretreatment" which improves paint adhesion and resists corrosion. The powder coat paint process is applied according to "Qualicoat" standards which guarantees the painted aluminum parts.

Blades Closed



Blades opened 45 degrees



Blades opened 90 degrees



Blades opened 140 degrees



Blades opened on side



Solar Modulation



Air Recirculation



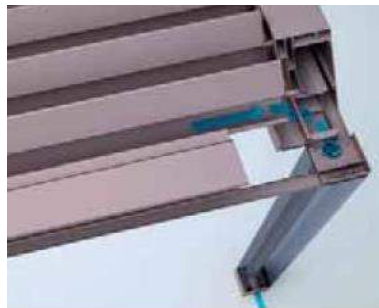
Rain Protection



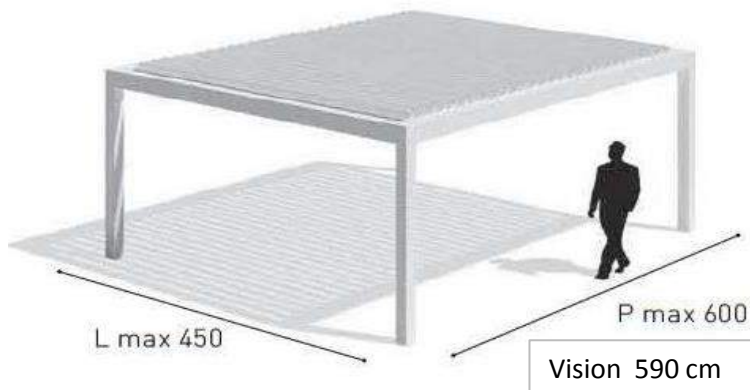
Load Resistance



Water Discharge



Possible Configurations:



OPERA:

Max module width 14' 9" (450 cm)

Max module proj. 19' 8" (600 cm)

VISION:

Max module width 14' 9" (450 cm)

Max module proj. 19' 4" (590 cm)

Louvered metal slats are 20 cm wide, so finished projection will be in increments of 20 cm (7.87"). You may need to increase or decrease your desired projection



01 Self Supporting system single.



02 Wall Mounted system single on the width side.



03 Wall Mounted system single on the projection side.



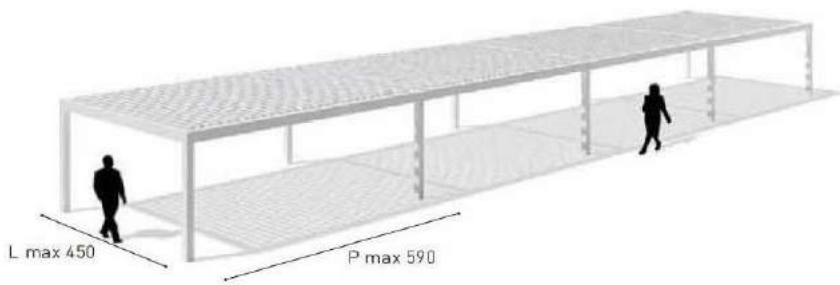
OPERA & VISION:

When coupled on width side, max module projection is 19' 4" (590 cm) per module

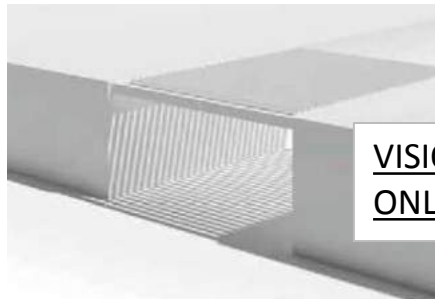
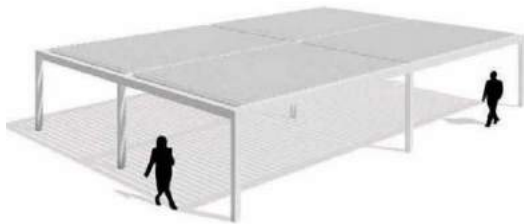


OPERA & VISION:

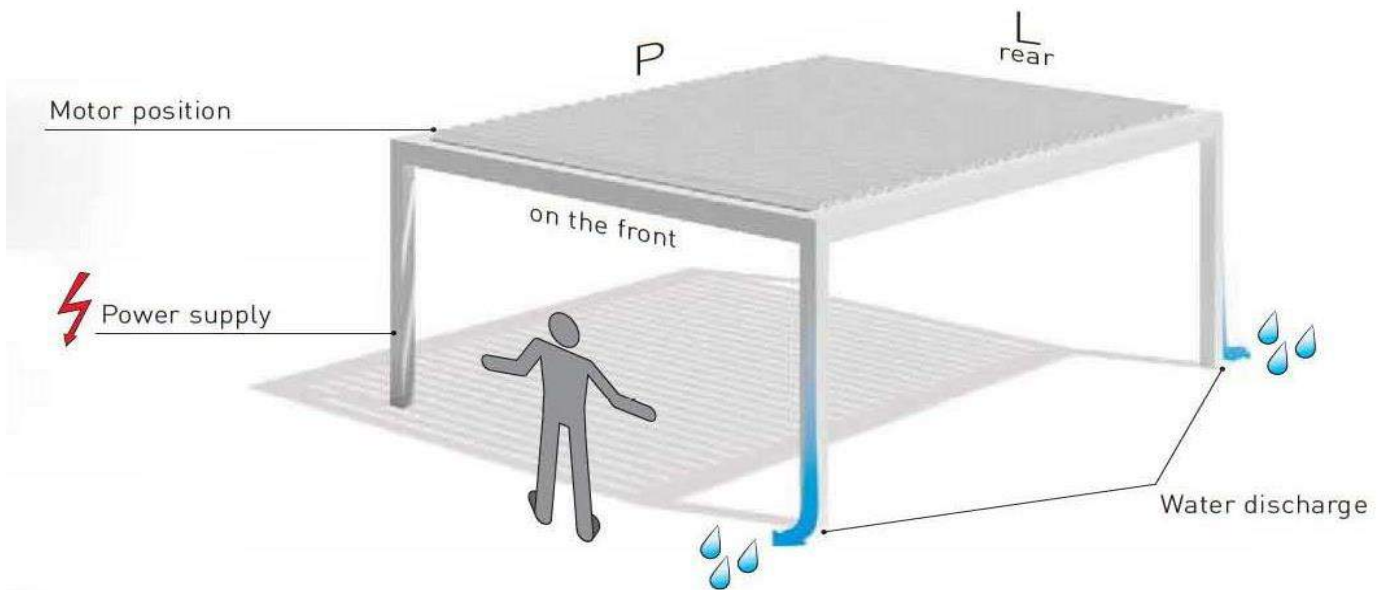
When coupled on projection side, max module projection is 19' 8" (600 cm) per module depending if Vision or Opera model.
Please inquiry with Sunair® office on exact finishing dimensions



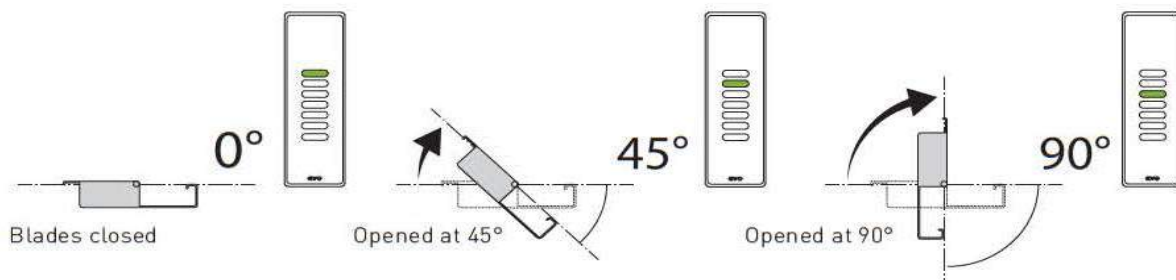
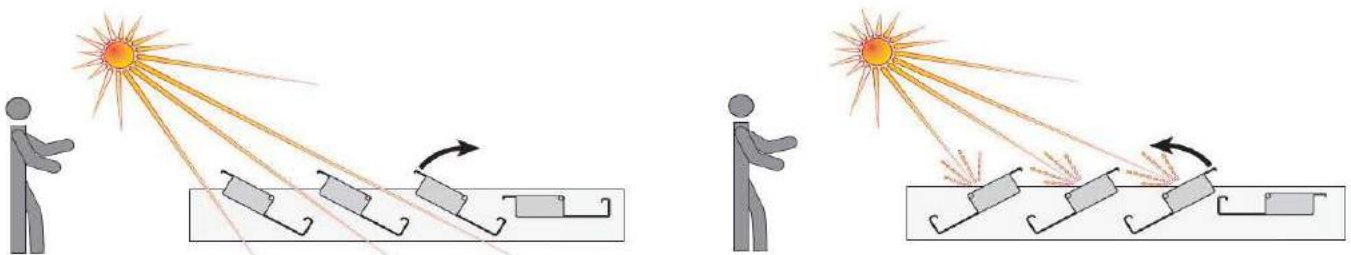
More possible configurations: Call Sunair to confirm if your size can be built.



**VISION MODEL
ONLY:**



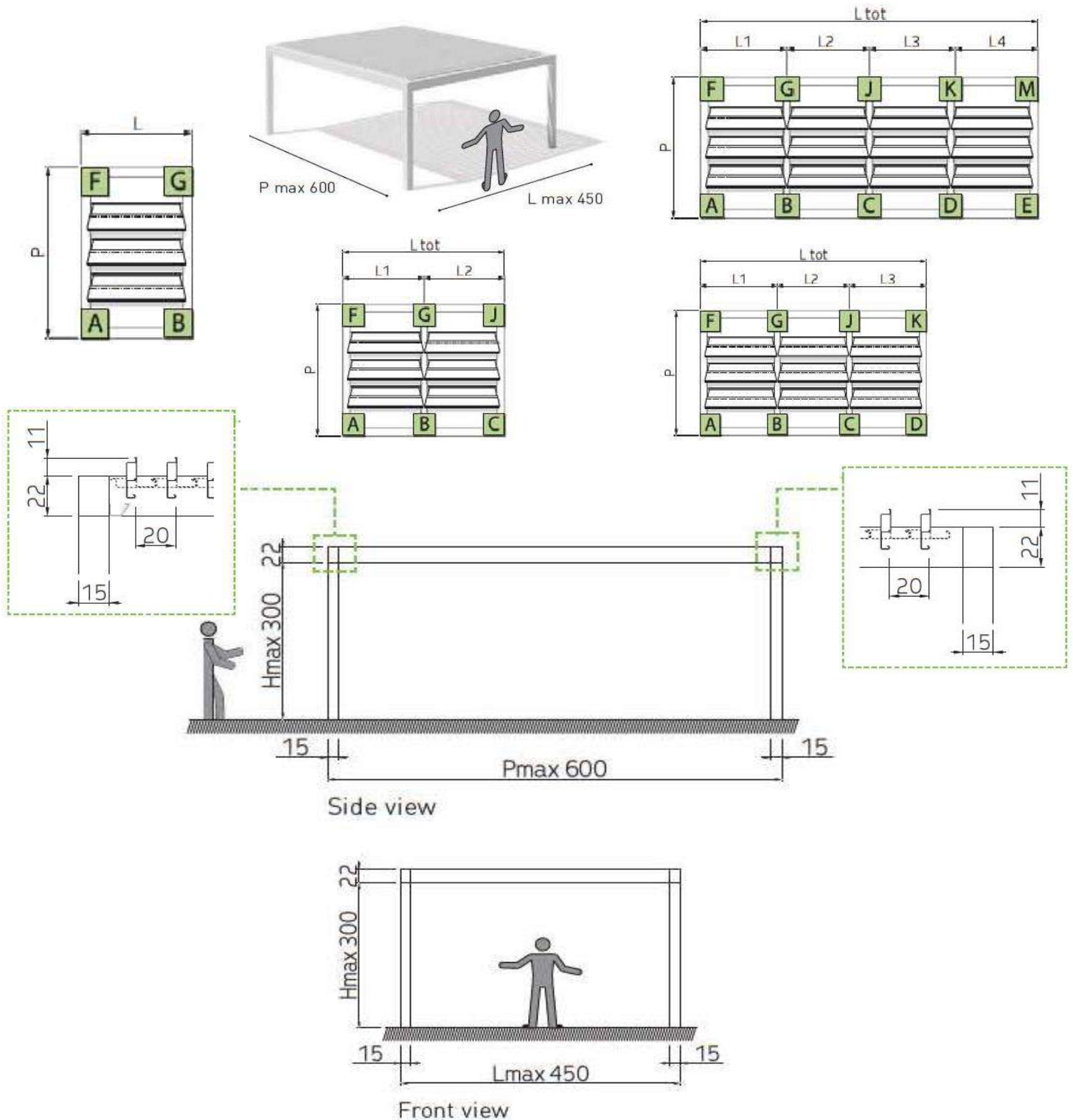
Water discharge should always be two (2) per module or section. It is not recommended to discharge in the posts that carries the electrical wiring. For additional modules at least one more discharge point is necessary.



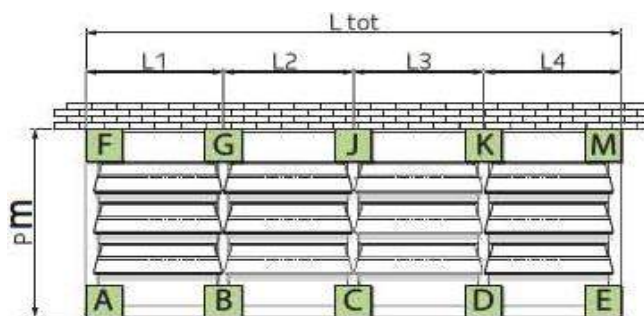
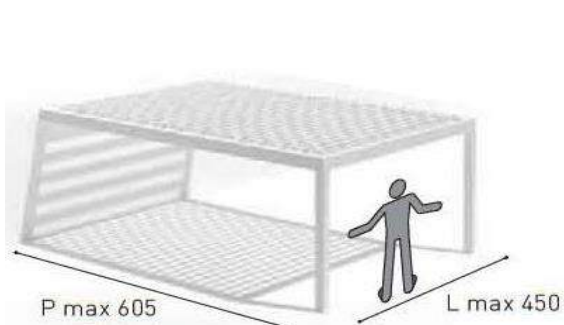
Blade rotation is pre-programmed on the remote as per pictures to Left.

OPERA MODEL

01L : Free standing and if multiple Coupled on projection side.

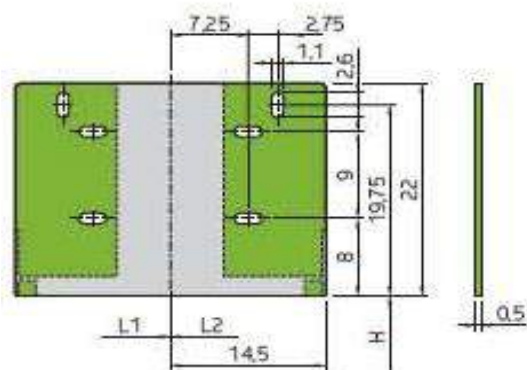
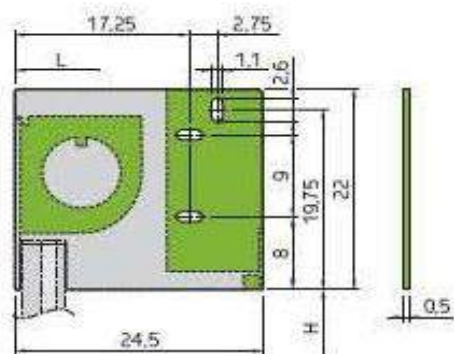
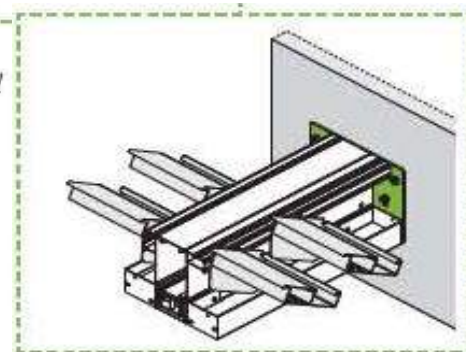
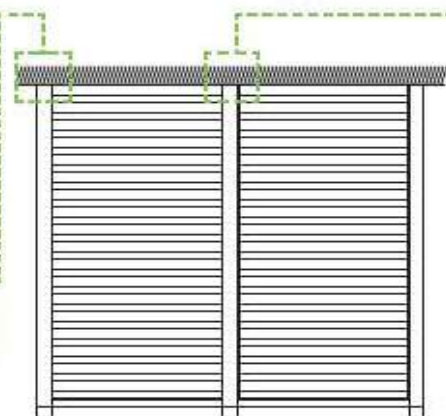
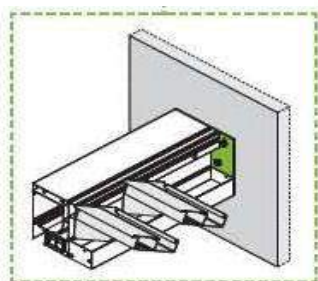
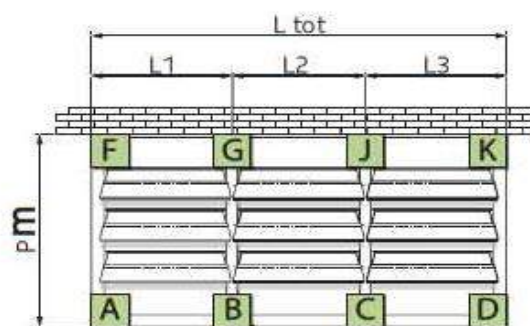
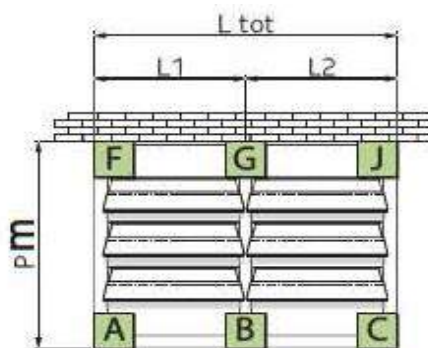
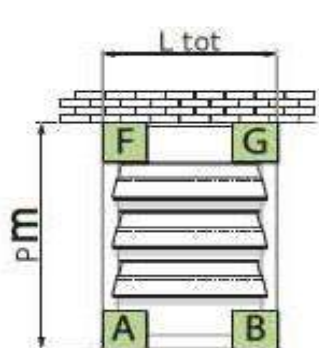


02L : Wall Mounted on width side "L"
If multiple Coupled on projection side.

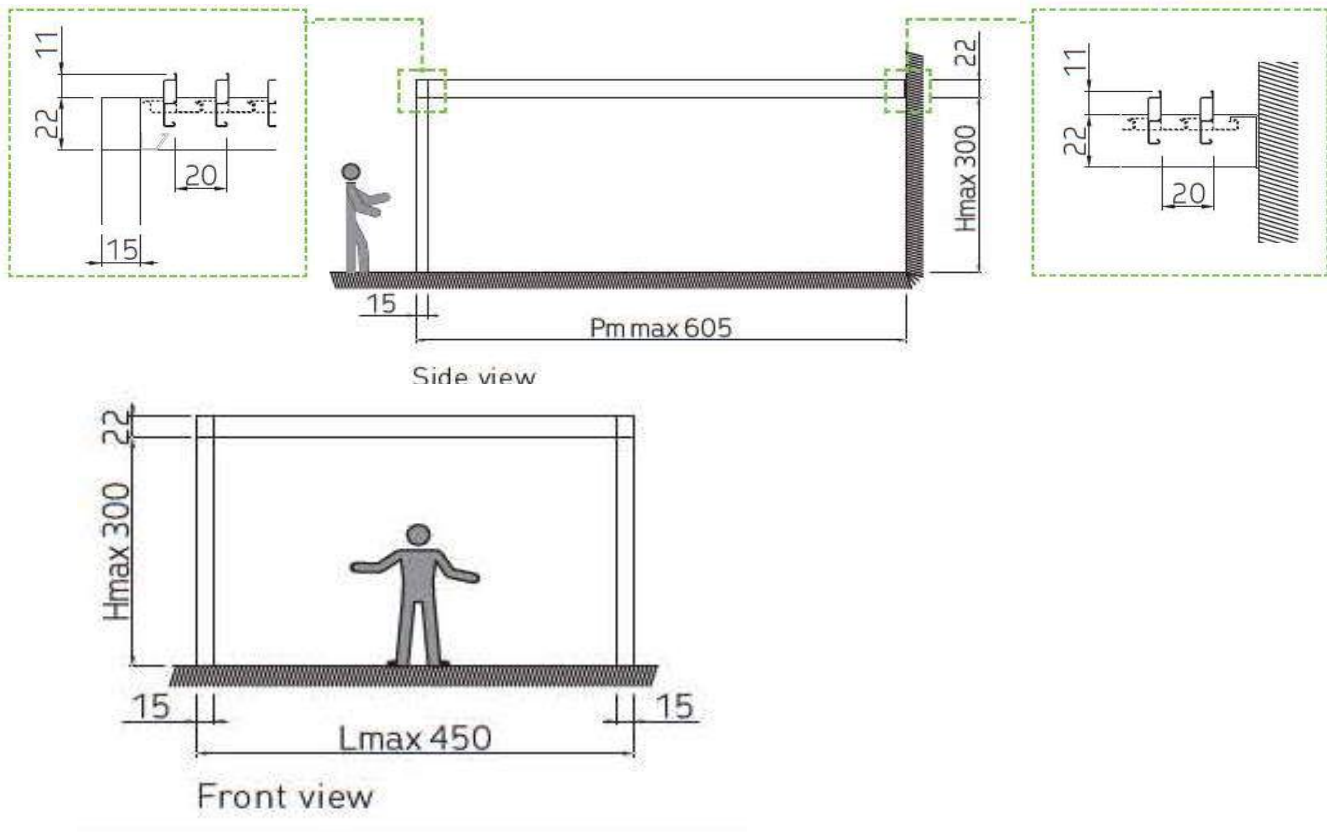


Max Projection 19' 10" (605 cm)

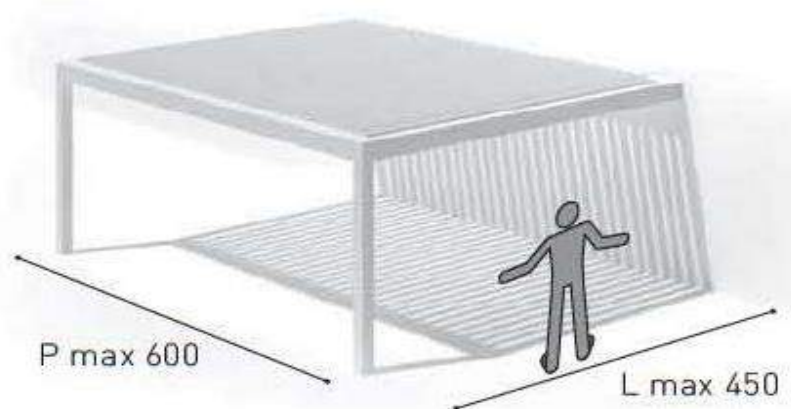
Pm = Wall depth



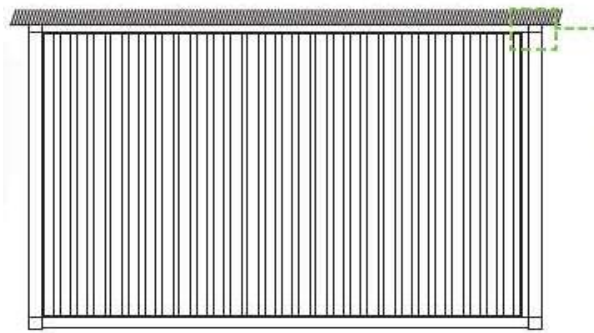
02L : cont:



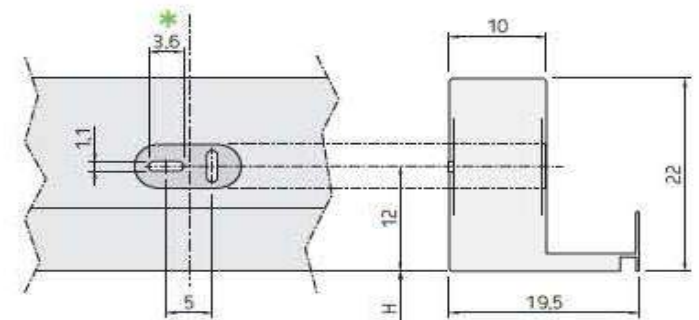
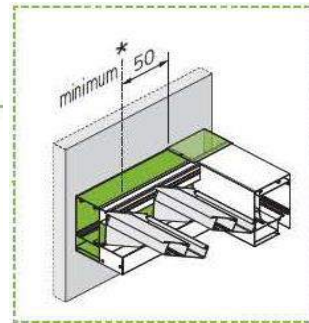
03L : Wall Mounted and if multiple Coupled on projection side.



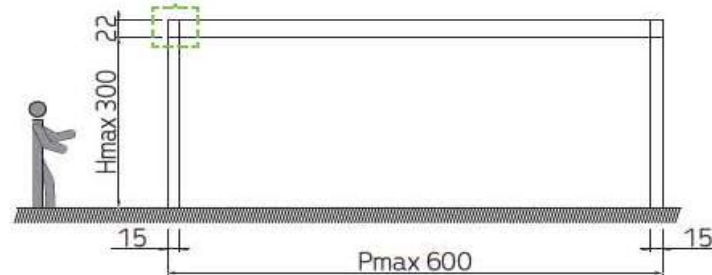
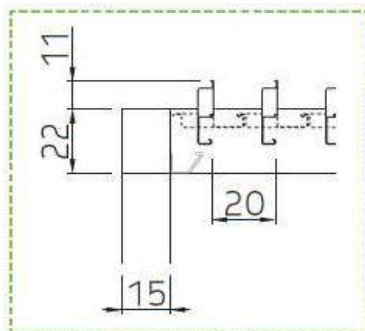
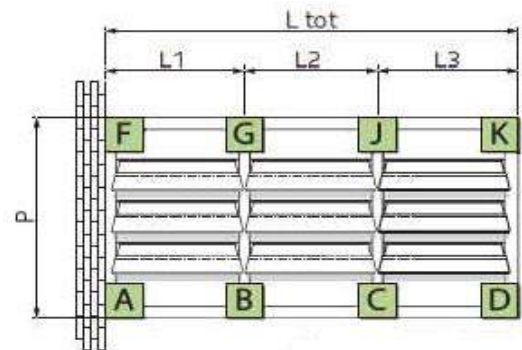
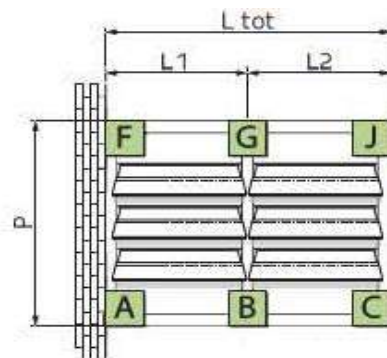
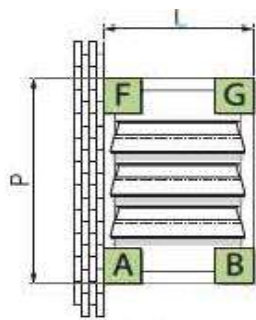
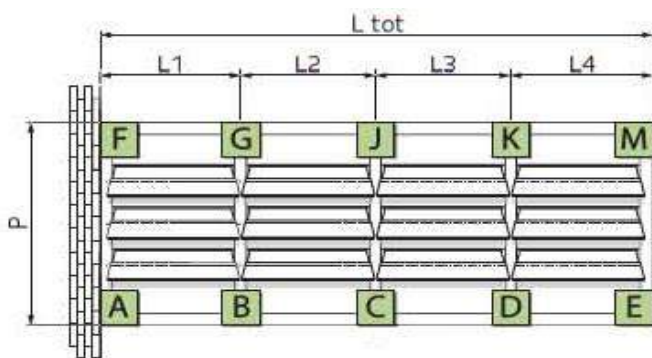
03L : cont:



Top view

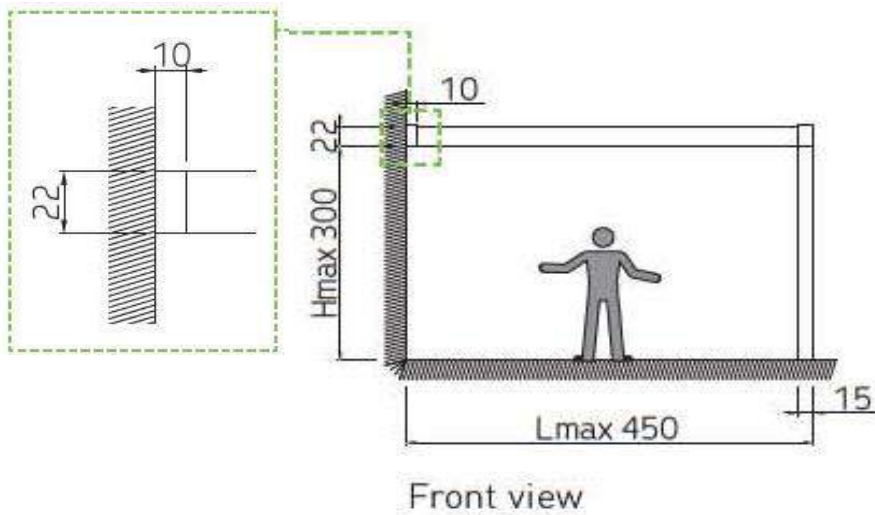


Wall mounting with profile

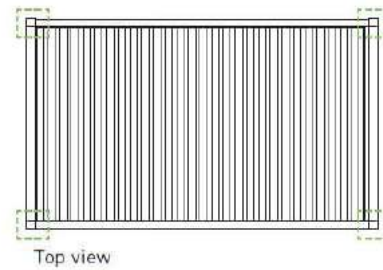


Side view

03L : cont:

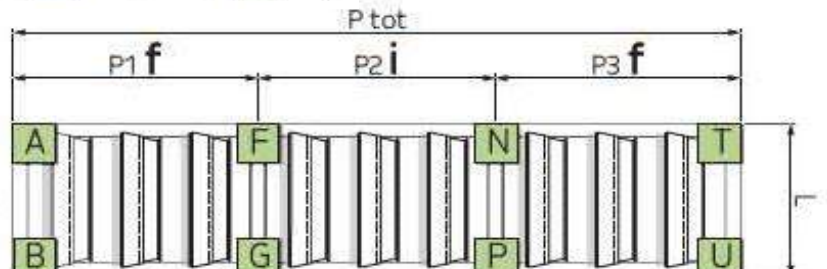
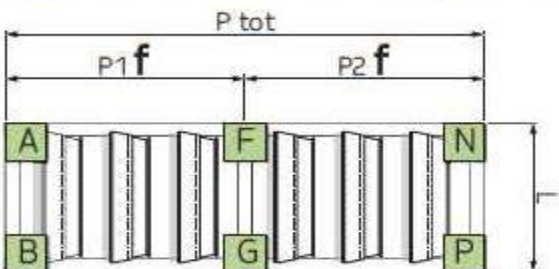
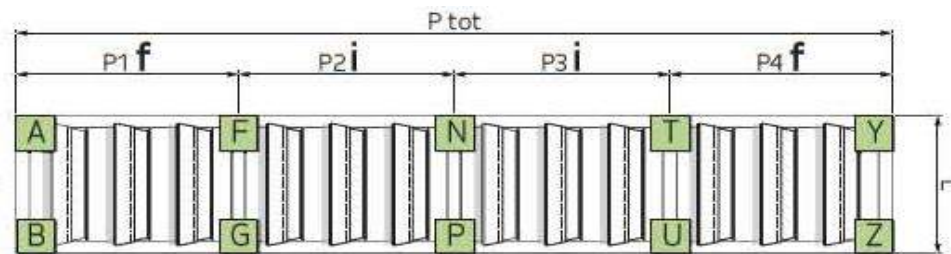
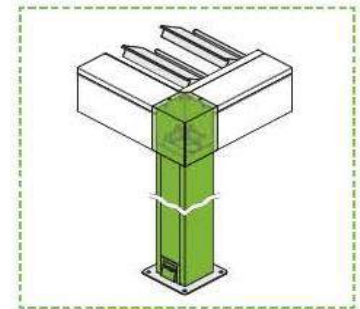


01P : Free Standing and if multiple Coupled on width side.

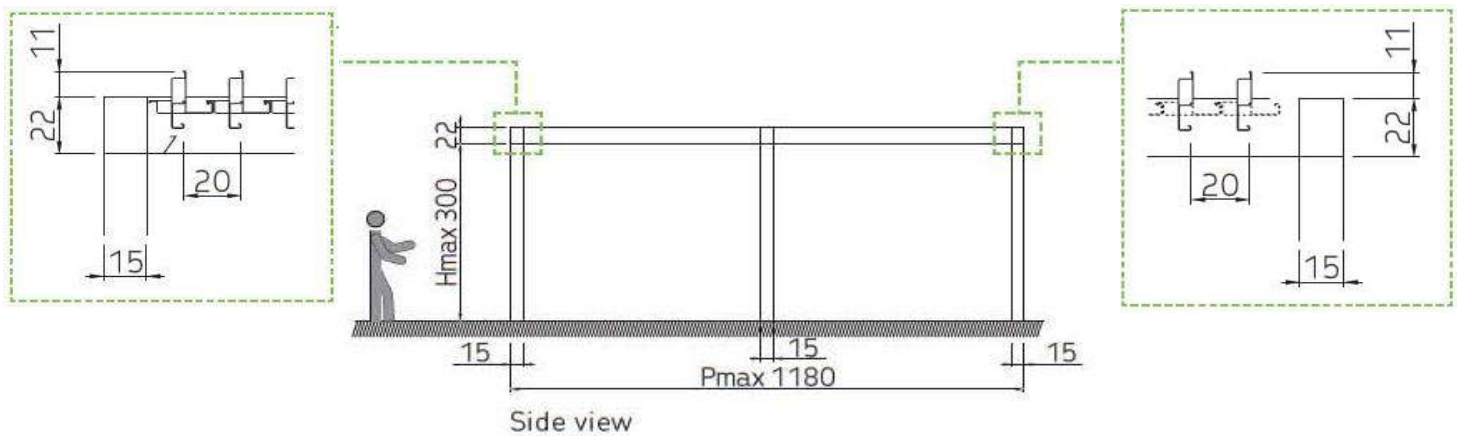


P_i = Intermediate module Projection side ($P_i = P - 20$ cm)

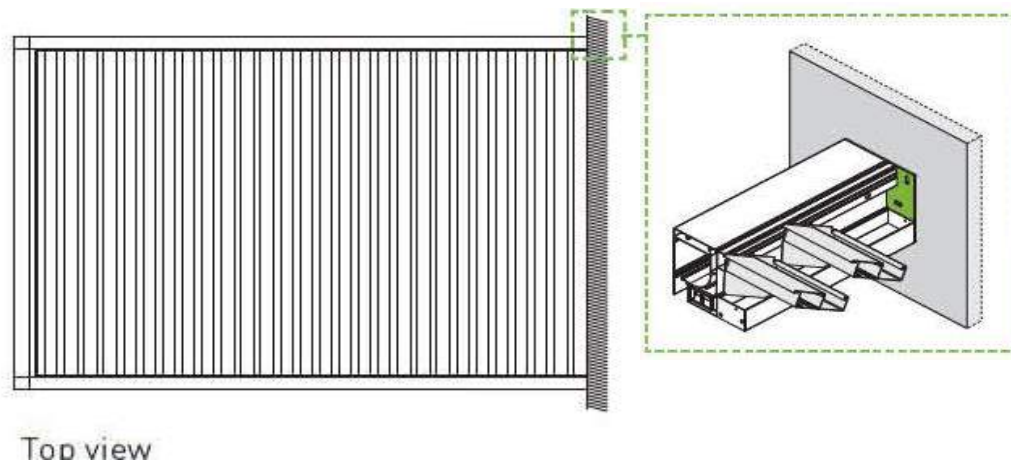
P_f = Final module projection ($P_f = P - 10$ cm)



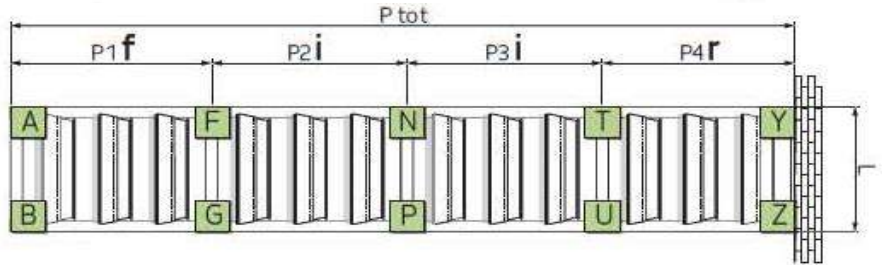
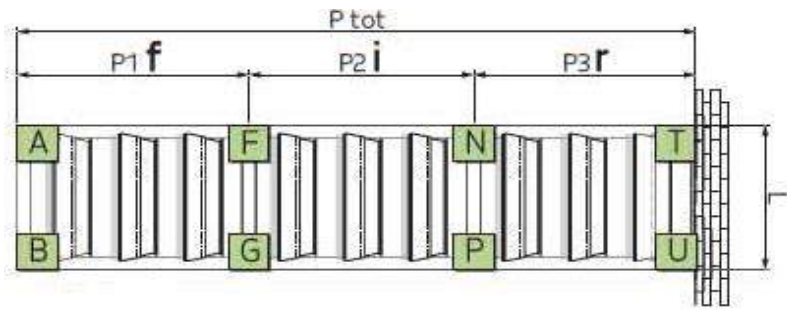
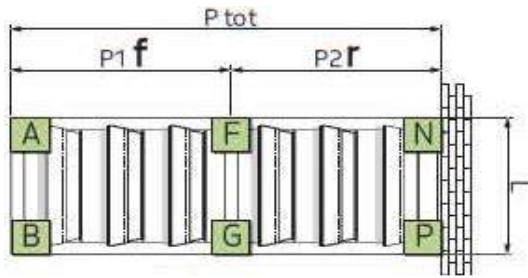
01P : con't



02P : Wall Mounted and if multiple Coupled on width side.



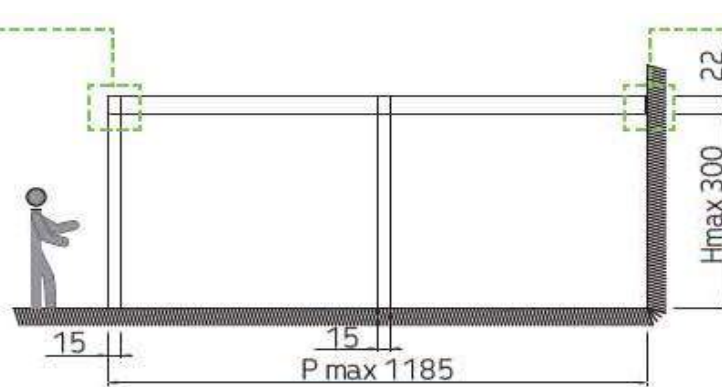
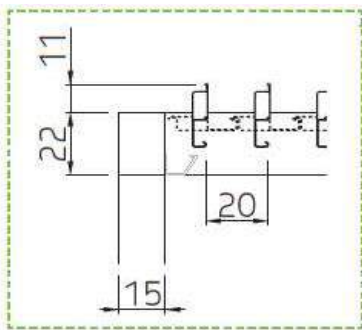
02P : con't



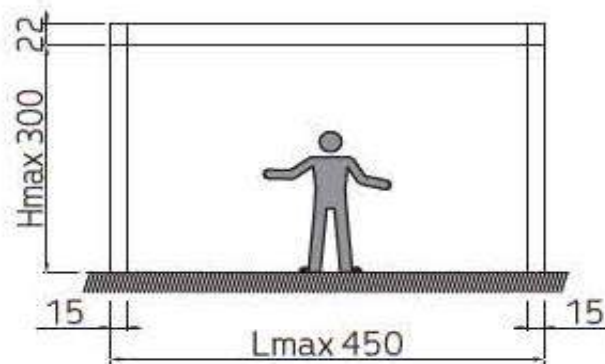
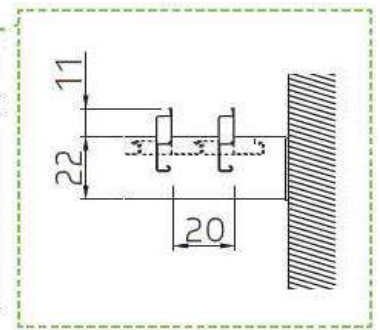
P_r = Reduced module projection ($P_r = P - 25$ cm)

P_i = Intermediate module Projection ($P_i = P - 20$ cm)

P_f = Final module projection ($P_f = P - 10$ cm)

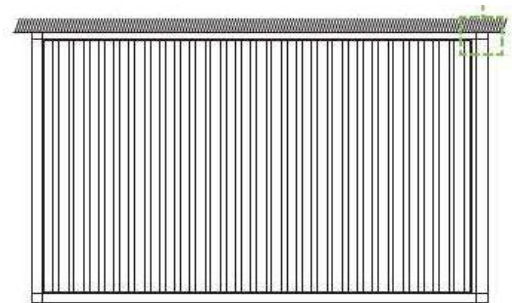


Side view



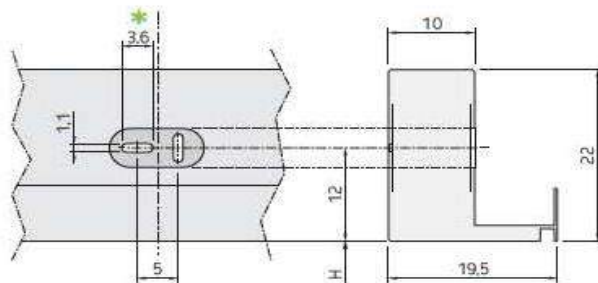
Front view

03P : Wall Mounted on side and if multiple Coupled on projection side.

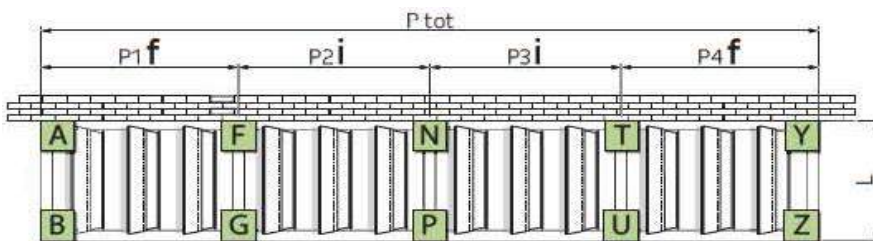
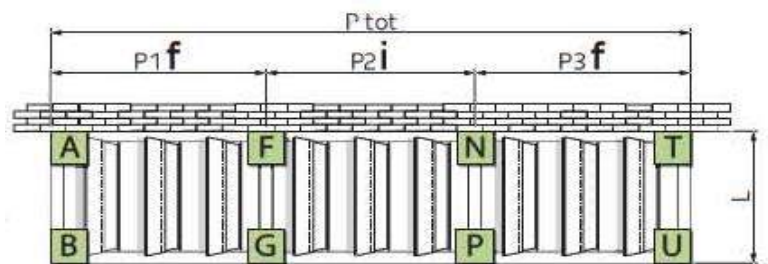
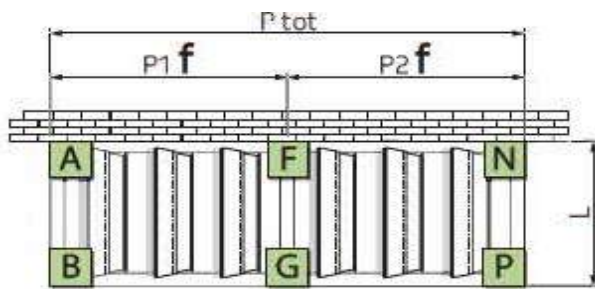
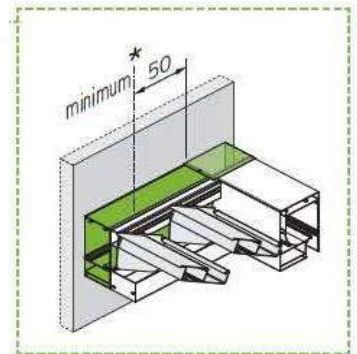


Top view

* For details on the location of machining for wall mounting, please contact our technical office.



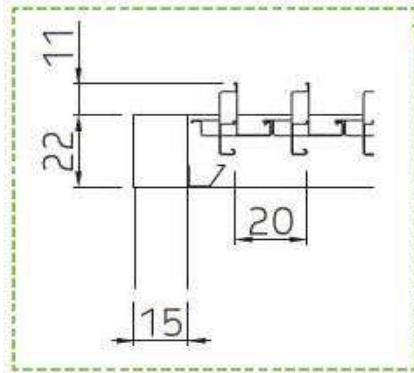
Wall mounting with profile



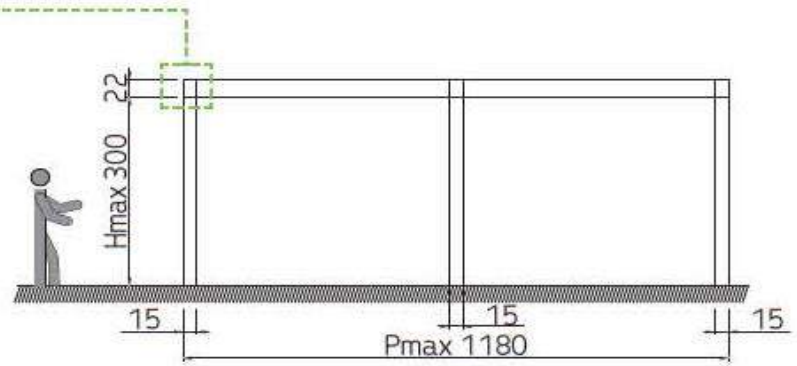
Pi = Intermediate module Projection ($P_i = P - 20 \text{ cm}$)

Pf = Final module projection ($P_f = P - 10 \text{ cm}$)

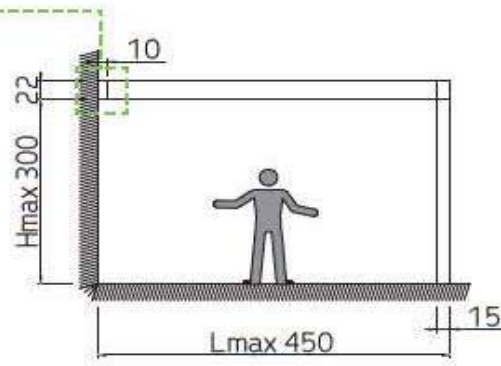
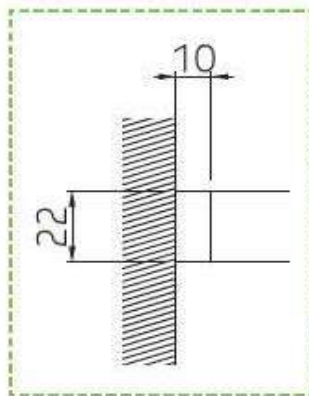
03P : con't



Side view



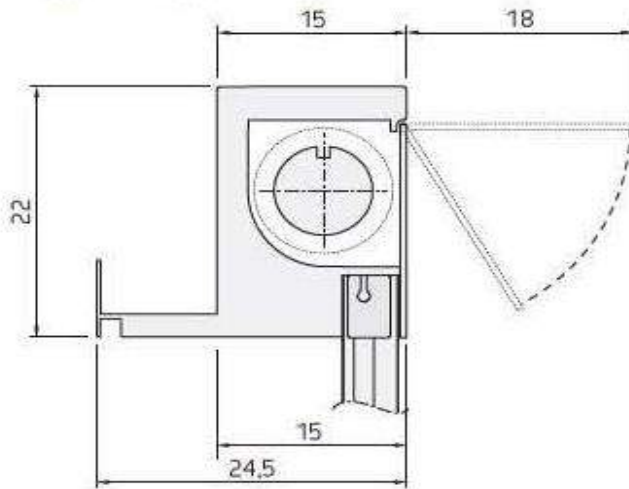
Side view



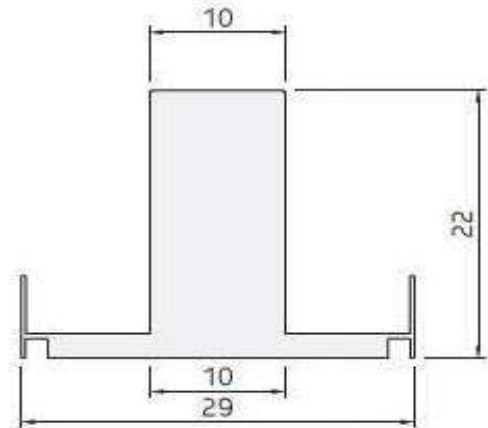
Front view

OPERA technical details and dimensions.

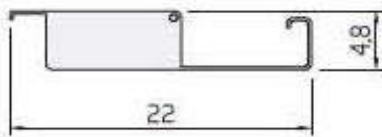
Supporting profile with RASO box



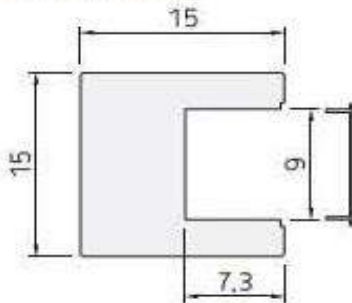
Intermediate supporting profile



Blade profile

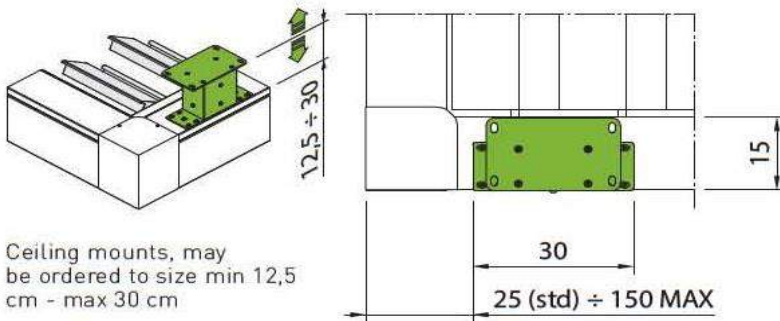


Post profile



Standard posts height is 90" (230 cm).
Above 230 cm is an upcharge
Maximum available Opera post height is 118" (300 cm).

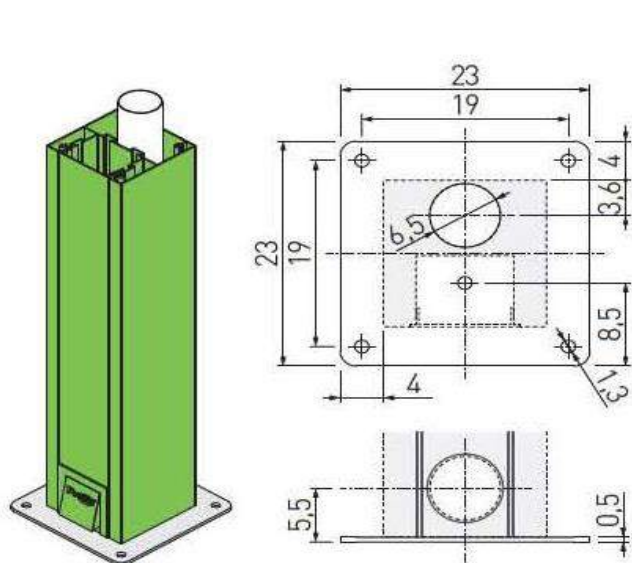
Ceiling mounting support



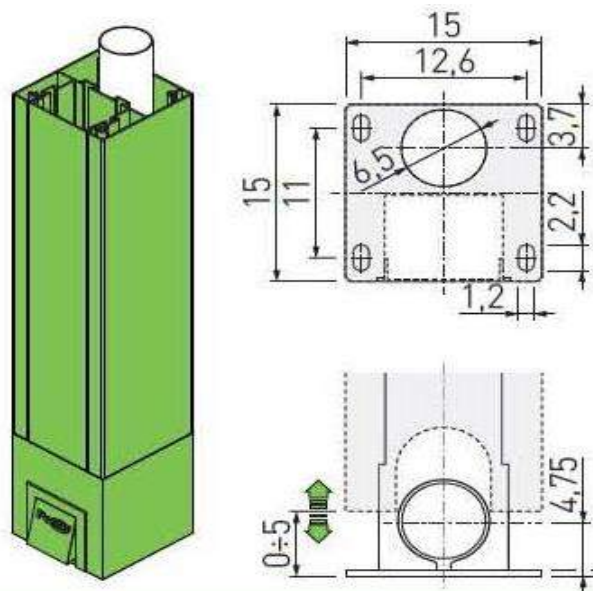
Ceiling mounts, may be ordered to size min 12,5 cm - max 30 cm

The optional corner supports can be installed around the perimeter, and minimum 25 cm from each corner up to maximum 150 cm from each corner.

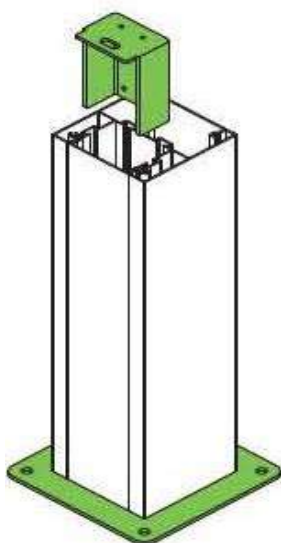
OPERA technical details and dimensions continued.



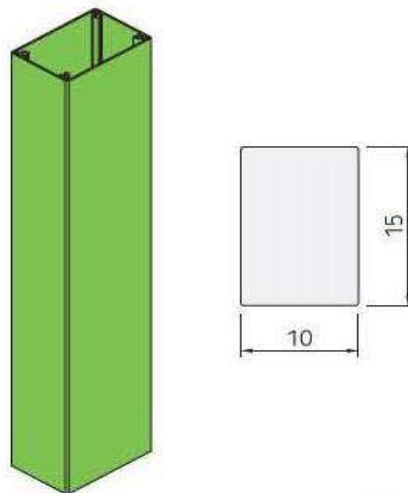
Standard post feet. Standard height is 90" (230 cm). Above 230 cm is an upcharge
Maximum available Opera post height is 118" (300 cm).



Optional telescoping feet up to 5 cm (2").
These are ideal on uneven surfaces and should be ordered if RASO screens are configured with the unit.



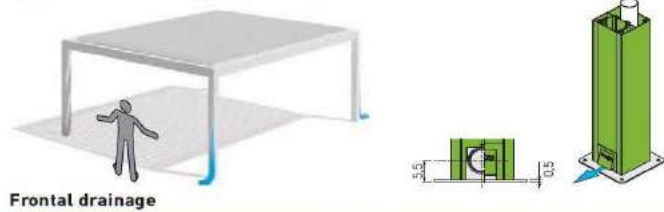
Additional posts with standard feet.



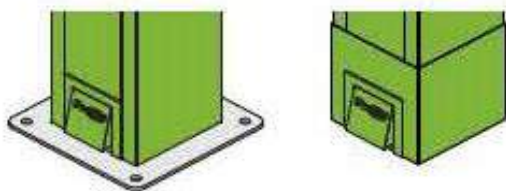
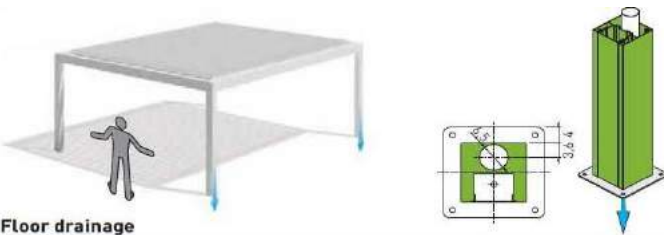
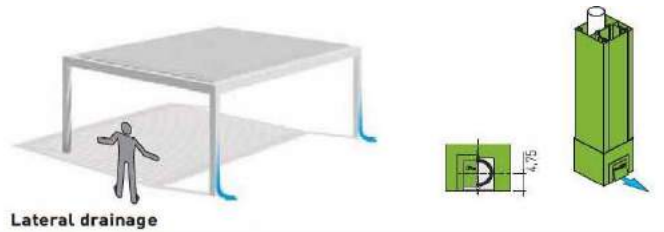
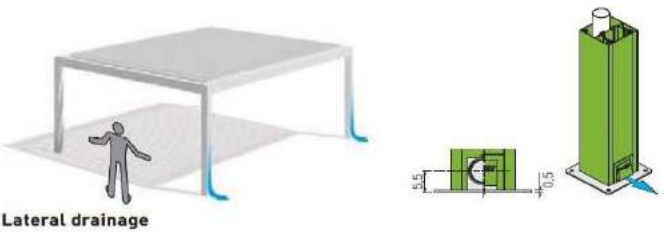
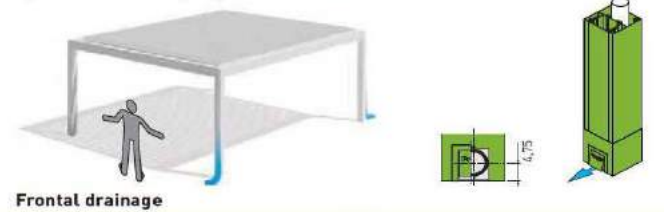
Optional wall posts if ordering Raso screens on 03 wall mounted configuration.

OPERA water drainage details.

Opera with standard ground bracket



Opera with telescopic ground bracket



Scupper water discharge / flap is only available with standard post feet and can not be painted.

24 VOLT BLADE MOTOR OPERA & VISION / Technical information

Sunair Awnings & Solar Screens P.O Box 1068, Jessup, MD 20794 / 410-799-1145



- 1) The Linak Actuator Blade motors are 24 volt motors. They operate the Louvered metal blades only for the top roof to rotate the blades back and forth from 0 - 140°. A 150 watt transformer is included with the Opera or Vision unit and is pre wired inside the Post of the Opera unit. The transformer is per-wired in the top gutter system of the Vision model. The input for the 150 watt transformers is 230v or 110v and with either 50Hz or 60 Hz.
- 2) Each "Module" needed will have its own 24 volt motor. If multiple Opera sections are joined together, each unit or module will have its own 24 volt Linak motor.
- 3) The Louvered Pergola remote is available in multi-channel to accommodate multiple Linak motors as well as also controlling the LED strips and lighting.
- 4) Any optional "Raso" roll down screens configured with your unit will use a 110 volt Somfy Altus motor and will be wired separately from the Linak 24 volt motor. The Somfy motor does not utilize a transformer, and has its own Telis Somfy remote.
- 5) The Linak "blade" motors will have its own remote controller, and any roll down screens will have its own remote controller.
- 6) Up to two (2) Linak Blade motors can be wired on each 150 watt transformer. Four (4) Louvered modules will be wired with two – four transformers.

See next pages for more information

Revised 8/8/2017

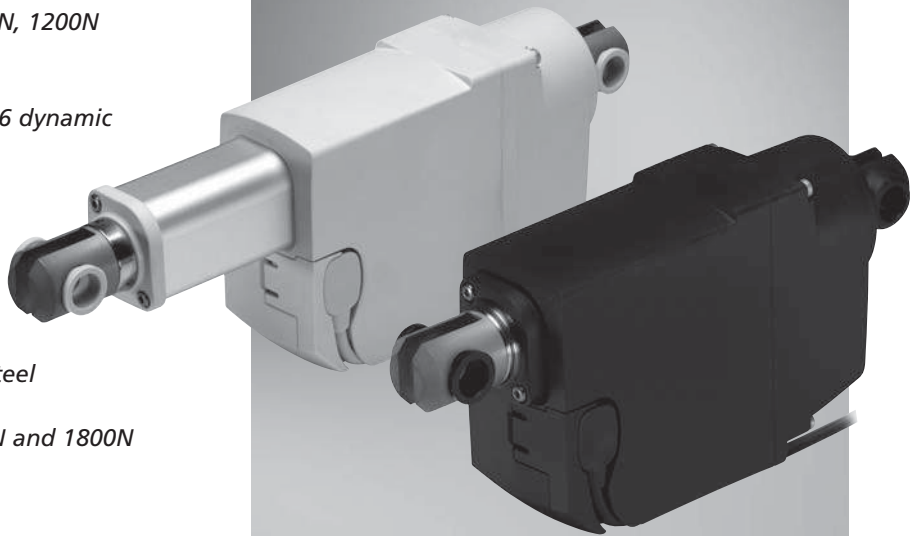
ACTUATOR LA23

Features and Options:

- Load in push: 2500N, 1800N, 1500N, 1200N or 900N
- Load in pull: 2500N, 1800N, 1500N, 1200N or 900N
- Housing colour: Grey or black
- Protection class: IPX4, IPX6 or IP66 dynamic
- Motor: 12 V DC, 24 V DC
- Stroke length: 20 - 300 mm
- Built-in dimensions:
110 mm + stroke length
- Positioning options: Hall, potential free end stop signals or Hall potentiometer
- Back fixture material: Plastic or steel
- Nut: Guided
- Safety nut: In push or pull (2500N and 1800N version only safety nut in push)
- Mechanical spline: Yes
- Built-in electrical end-stop: Yes
- Exchangeable cable: Yes
- Mechanical end stop: Yes

Usage:

- Duty cycle: 10%, 2 minutes continuous use followed by 18 minutes not in use
- Usage temperature:
-30°C to +55°C (according to ISO 7176-9)
- Storage temperature:
-45°C to +70°C (according to ISO 7176-9)
- Compatibility: Is approved and tested to run with: CB20, CB16 and CB6S.
Will be approved and tested to run with: CBJ1/2, CBJC, CBJH, and CB8 (September 2011).
- Approvals: Is approved according to DSI/EN60601-1 and UL60601-1



MEDLINE[®]
IMPROVING EFFICIENCY

CARELINE[®]
IMPROVING EFFICIENCY

TECHLINE[®]
IMPROVING FLEXIBILITY

The LA23 actuator is a small and strong push or pull actuator (up to 2500 N). The LA23 can be used in various applications where size is important.

Some of the benefits the LA23 offers you are:

- Compact design
- High lifting force
- Exchangeable cables

The standard LA23 is available for both the CARELINE[®], MEDLINE[®] and TECHLINE[®] product ranges.



iFLEX is the new sub-brand under which every TECHLINE[®] actuator with built-in intelligence is unified e.g. LINBUS and MODBUS.

For more information on iFLEX, please see:
www.linak.com/techline



WE IMPROVE YOUR LIFE

LA23

Ordering example:

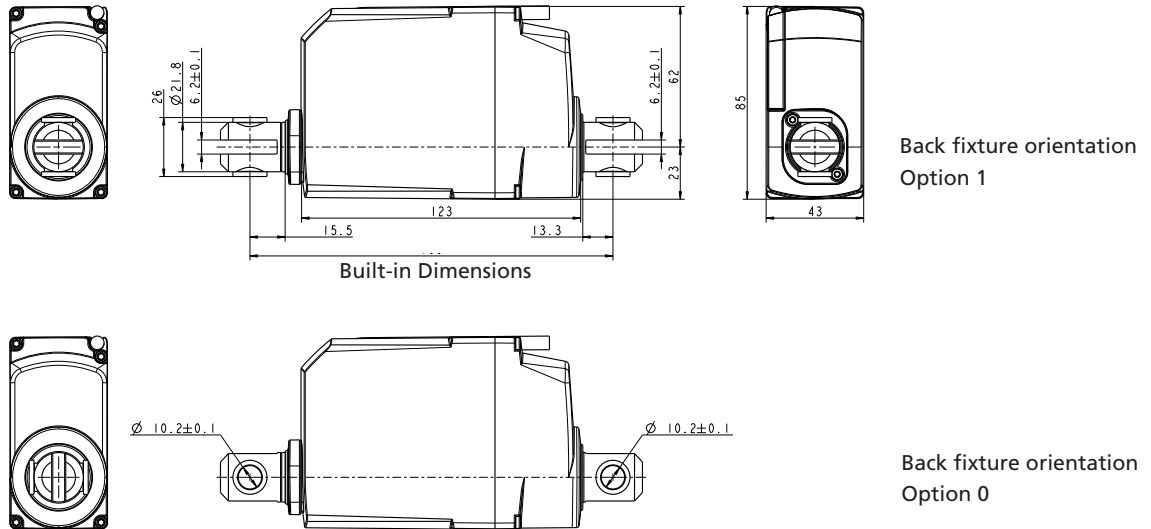
23 6 1 A 0 1 0 00 250 A 4

| | | | | | | | | | | | |
|----|---|---|---|---|---|---|----|-----|---|---|--|
| 23 | 6 | 1 | A | 0 | 1 | 0 | 00 | 250 | A | 4 | |
| | | | | | | | | | | | IP degree: |
| | | | | | | | | | | | 4 = IPX4 |
| | | | | | | | | | | | 6 = IPX6 |
| | | | | | | | | | | | 1 = IP66 Dynamic |
| | | | | | | | | | | | Motortype: |
| | | | | | | | | | | | A = 12V |
| | | | | | | | | | | | B = 24V (Running mainly with battery (CBJ1, CBJ2, CBJH, CBJC, wheelchairs)) |
| | | | | | | | | | | | G = 24V (For OpenBus (CB20, CB16, CB6s)) |
| | | | | | | | | | | | Stroke: |
| | | | | | | | | | | | XXX = mm Min. 020 mm, Max. 300 mln steps of 5 mm |
| | | | | | | | | | | | Recommended versions: |
| | | | | | | | | | | | 020 mm |
| | | | | | | | | | | | 050 mm |
| | | | | | | | | | | | 100 mm |
| | | | | | | | | | | | 150 mm |
| | | | | | | | | | | | 200 mm |
| | | | | | | | | | | | 250 mm |
| | | | | | | | | | | | 300 mm |
| | | | | | | | | | | | Positioning: |
| | | | | | | | | | | | 00 = No positioning |
| | | | | | | | | | | | 01 = Potential free end stop signals |
| | | | | | | | | | | | 02 = Standard dual hall positioning |
| | | | | | | | | | | | 03 = Dual Hall PNP positioning |
| | | | | | | | | | | | xx = For more positioning - please call LINAK |
| | | | | | | | | | | | Safety option: |
| | | | | | | | | | | | 0 = No safety options (pitch 3, 5, 6, 9 or 12) |
| | | | | | | | | | | | 1 = Safety nut for push (pitch 3, 5, 6, 9 or 12) |
| | | | | | | | | | | | 2 = Safety nut for pull (pitch 6, 9 or 12) |
| | | | | | | | | | | | 3 = Mechanical spline without safety nut (pitch 3, 5, 6, 9 or 12) |
| | | | | | | | | | | | 4 = Mechanical spline with safety nut (pitch 3, 5, 6, 9 or 12)) |
| | | | | | | | | | | | Housing colour: |
| | | | | | | | | | | | 1 = Black (RAL 9005) |
| | | | | | | | | | | | 2 = Light grey (RAL7035) |
| | | | | | | | | | | | Piston rod eye: |
| | | | | | | | | | | | 0 = Standard (steel) with slot (6.1 mm), eye Ø10.2 mm, incl. plastic bushings |
| | | | | | | | | | | | 1 = Standard (steel) with slot (6.1 mm), eye Ø10.2 mm, excl. plastic bushings |
| | | | | | | | | | | | Back fixture rotation: |
| | | | | | | | | | | | 0 = 0° clockwise |
| | | | | | | | | | | | A = 7.5° clockwise |
| | | | | | | | | | | | B = 15° clockwise |
| | | | | | | | | | | | C = 22.5° clockwise |
| | | | | | | | | | | | D = 30° clockwise |
| | | | | | | | | | | | E = 37.5° clockwise |
| | | | | | | | | | | | F = 45° clockwise |
| | | | | | | | | | | | G = 52.5° clockwise |
| | | | | | | | | | | | H = 60° clockwise |
| | | | | | | | | | | | J = 67.5° clockwise |
| | | | | | | | | | | | K = 75° clockwise |
| | | | | | | | | | | | L = 82.5° clockwise |
| | | | | | | | | | | | 1 = 90° clockwise |
| | | | | | | | | | | | M = 97.5° clockwise |
| | | | | | | | | | | | N = 105° clockwise |
| | | | | | | | | | | | P = 112.5° clockwise |
| | | | | | | | | | | | Q = 120° clockwise |
| | | | | | | | | | | | R = 127.5° clockwise |
| | | | | | | | | | | | S = 135° clockwise |
| | | | | | | | | | | | T = 142.5° clockwise |
| | | | | | | | | | | | U = 150° clockwise |
| | | | | | | | | | | | V = 157.5° clockwise |
| | | | | | | | | | | | W = 165° clockwise |
| | | | | | | | | | | | Z = 172.5° clockwise |
| | | | | | | | | | | | Back fixture: |
| | | | | | | | | | | | 1 = Plastic with slot (6.1 mm), eye Ø10.2 (only for push). |
| | | | | | | | | | | | (only for pitch 6, 9 or 12 and safety option 0 or 1 (push)) |
| | | | | | | | | | | | 2 = Steel with slot (6.1mm), eye Ø10.2 mm, incl. plastic bushings |
| | | | | | | | | | | | (pitch 3, 5, 6, 9 or 12) |
| | | | | | | | | | | | 3 = Steel with slot (6.1 mm), eye Ø10.2 mm, excl. plastic bushings |
| | | | | | | | | | | | (pitch 3, 5, 6, 9 or 12) |
| | | | | | | | | | | | Spindletype: |
| | | | | | | | | | | | 3 = 3 mm pitch (2500 N) |
| | | | | | | | | | | | 5 = 5 mm pitch (1800 N) |
| | | | | | | | | | | | 6 = 6 mm pitch (1500 N) |
| | | | | | | | | | | | 9 = 9 mm pitch (1200 N) |
| | | | | | | | | | | | 0 = 12 mm pitch (900 N) |
| | | | | | | | | | | | Actuator type: |
| | | | | | | | | | | | 23 = LA23 |

Note:

- Cables must be ordered separately.
- Cable locks must be ordered separately for LA23.

Dimensions:



Tolerances:

For built-in dimensions and stroke ± 2 mm.

The built-in dimension depends upon the chosen safety option and stroke length. Please see the table below to decide upon the built-in dimension.

| Safety option | Stroke length | Spindle pitch | Minimum Built-in Dimensions |
|---|---------------|---------------|-----------------------------|
| 0 = No safety option | 20 - 49 | 6, 9 or 12 | 160 |
| | | 3, 5 | 168 |
| 1 = Safety nut for push | 20 - 49 | 6, 9 or 12 | 160 |
| | | 3, 5 | 168 |
| 2 = Safety nut for pull | 20 - 49 | 6, 9 or 12 | 172 |
| 3 = Mechanical Spline for push | 20 - 49 | 6, 9 or 12 | 180 |
| | | 3, 5 | 196 |
| 4 = Mechanical Spline & safety nut for push | 20 - 49 | 6, 9 or 12 | 180 |
| | | 3, 5 | 196 |
| 0 = No safety option | 50 - 200 | 6, 9 or 12 | 110 + stroke |
| | | 3, 5 | 118 + stroke |
| 1 = Safety nut for push | 50 - 200 | 6, 9 or 12 | 110 + stroke |
| | | 3, 5 | 118 + stroke |
| 2 = Safety nut for pull | 50 - 200 | 6, 9 or 12 | 122 + stroke |
| 3 = Mechanical Spline for push | 50 - 200 | 6, 9 or 12 | 130 + stroke |
| | | 3, 5 | 146 + stroke |
| 4 = Mechanical Spline & safety nut for push | 50 - 200 | 6, 9 or 12 | 130 + stroke |
| | | 3, 5 | 146 + stroke |
| 0 = No safety option | 201 - 300 | 6, 9 or 12 | 130 + stroke |
| | | 3, 5 | 138 + stroke |
| 1 = Safety nut for push | 201 - 300 | 6, 9 or 12 | 130 + stroke |
| | | 3, 5 | 138 + stroke |
| 2 = Safety nut for pull | 201 - 300 | 6, 9 or 12 | 142 + stroke |
| 3 = Mechanical Spline for push | 201 - 300 | 6, 9 or 12 | 150 + stroke |
| | | 3, 5 | 166 + stroke |
| 4 = Mechanical Spline & safety nut for push | 201 - 300 | 6, 9 or 12 | 150 + stroke |
| | | 3, 5 | 166 + stroke |

Technical specifications:

| Power supply | Spindle pitch (mm) | Load max. Push or Pull (N) | Motor type | Speed at 0/ full load (mm/sec.) | Current at 0/ full load (Amp.) |
|-----------------------|--------------------|----------------------------|------------|---------------------------------|--------------------------------|
| 12VDC | 3 | 2500 / 2500 | A: 12V | 3.1 / 2.3 | 0.6 / 3.3 |
| CBJ1/2, CBJH and CBJC | 3 | 2500 / 2500 | B: 24V | 3.2 / 2.5 | 0.3 / 1.8 |
| OpenBus™ | 3 | 2500 / 2500 | G: 24V | 3.2 / 2.7 | 0.2 / 1.2 |
| 12VDC | 5 | 1800 / 1800 | A: 12V | 5.1 / 4.1 | 0.7 / 3.9 |
| CBJ1/2, CBJH and CBJC | 5 | 1800 / 1800 | B: 24V | 5.3 / 4.7 | 0.3 / 1.9 |
| OpenBus™ | 5 | 1800 / 1800 | G: 24V | 5.4 / 4.8 | 0.2 / 1.3 |
| 12VDC | 6 | 1500 / 1500 | A: 12V | 6.2 / 4.6 | 0.8 / 3.6 |
| CBJ1/2, CBJH and CBJC | 6 | 1500 / 1500 | B: 24V | 6.4 / 5.5 | 0.3 / 1.5 |
| OpenBus™ | 6 | 1500 / 1500 | G: 24V | 6.3 / 5.5 | 0.2 / 1.1 |
| 12VDC | 9 | 1200 / 1200 | A: 12V | 9.3 / 6.8 | 0.7 / 3.8 |
| CBJ1/2, CBJH and CBJC | 9 | 1200 / 1200 | B: 24V | 9.4 / 8.2 | 0.4 / 1.9 |
| OpenBus™ | 9 | 1200 / 1200 | G: 24V | 9.2 / 8.2 | 0.2 / 1.1 |
| 12VDC | 12 | 900 / 900 | A: 12V | 12.4 / 9.2 | 0.7 / 3.8 |
| CBJ1/2, CBJH and CBJC | 12 | 900 / 900 | B: 24V | 12.6 / 10.5 | 0.3 / 1.8 |
| OpenBus™ | 12 | 900 / 900 | G: 24V | 12.6 / 10.3 | 0.2 / 1.3 |

Safety nut and steel back fixture overview

| | Safety nut | Steel back fixture |
|--------|--|--------------------|
| 900 N | Optional in push or pull | Required in pull |
| 1200 N | Optional in push or pull | Required in pull |
| 1500 N | Optional in push or pull | Required in pull |
| 1800 N | Optional in push (Safety nut 2500 N not available in pull) | Always required |
| 2500 N | Optional in push (Safety nut 2500 N not available in pull) | Always required |

Self-locking specifications

| Maximum self-lock (N) | Without short circuit | With short circuit |
|-----------------------|-----------------------|--------------------|
| 12 mm pitch | 750 | 900 |
| 9 mm pitch | 750 | 1200 |
| 6 mm pitch | 1200 | 1500 |
| 5 mm pitch | 1600 | 1800 |
| 3 mm pitch | 2500 | 2500 |

Terms of use

The user is responsible for determining the suitability of LINAK products for specific application. LINAK takes great care in providing accurate and up-to-date information on its products. However, due to continuous development in order to improve its products, LINAK products are subject to frequent modifications and changes without prior notice. Therefore, LINAK cannot guarantee the correct and actual status of said information on its products. While LINAK uses its best efforts to fulfil orders, LINAK cannot, for the same reasons as mentioned above, guarantee the availability of any particular product. Therefore, LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or other written material drawn up by LINAK. All sales are subject to the Standard Terms of Sale and Delivery for LINAK. For a copy hereof, please contact LINAK.



Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 94%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 5 years warranty (Note.9)



HLG-150H-12 ☐ Blank : IP67 rated. Cable for I/O connection.

A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.

B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.

D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.

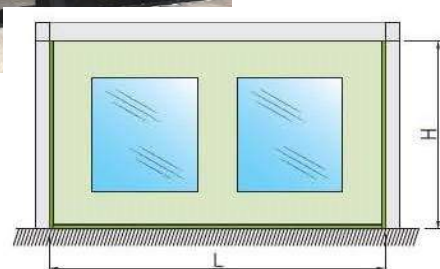
SPECIFICATION

| MODEL | | HLG-150H-12 | HLG-150H-15 | HLG-150H-20 | HLG-150H-24 | HLG-150H-30 | HLG-150H-36 | HLG-150H-42 | HLG-150H-48 | HLG-150H-54 | |
|--|--|--|-------------|----------------|-------------|---------------|-------------|-------------|-------------|-------------|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V | |
| | RATED CURRENT | 12.5A | 10A | 7.5A | 6.3A | 5A | 4.2A | 3.6A | 3.2A | 2.8A | |
| | RATED POWER | 150W | 150W | 150W | 151.2W | 150W | 151.2W | 151.2W | 153.6W | 151.2W | |
| | RIPPLE & NOISE (max.) <small>Note.2</small> | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | |
| | VOLTAGE ADJ. RANGE <small>Note.5</small> | 10.8 ~ 13.5V | 13.5 ~ 17V | 17 ~ 22V | 22 ~ 27V | 27 ~ 33V | 33 ~ 40V | 38 ~ 46V | 43 ~ 53V | 49 ~ 58V | |
| | CURRENT ADJ. RANGE | Can be adjusted by internal potentiometer or through output cable | | | | | | | | | |
| | | 7.5 ~ 12.5A | 6 ~ 10A | 4.5 ~ 7.5A | 3.8 ~ 6.3A | 3 ~ 5A | 2.5 ~ 4.2A | 2.16 ~ 3.6A | 1.92 ~ 3.2A | 1.68 ~ 2.8A | |
| | VOLTAGE TOLERANCE <small>Note.3</small> | ±2.5% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±2.0% | ±1.5% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| SETUP, RISE TIME <small>Note.7</small> | 2500ms, 80ms at full load 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load 230VAC / 115VAC | | | | | | | | | | |
| HOLD UP TIME (Typ.) | 16ms at full load 230VAC / 115VAC | | | | | | | | | | |
| INPUT | VOLTAGE RANGE <small>Note.4</small> | 90 ~ 305VAC 127 ~ 431VDC | | | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve) | | | | | | | | | |
| | EFFICIENCY (Typ.) | 91.5% | 92% | 93% | 93% | 93.5% | 93.5% | 94% | 94% | 94% | |
| | AC CURRENT (Typ.) | 1.7A / 115VAC | | 0.75A / 230VAC | | 0.7A / 277VAC | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 75A/230VAC | | | | | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 277VAC | | | | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 108% | | | | | | | | | |
| | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | | |
| | SHORT CIRCUIT | Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | | |
| | OVER VOLTAGE | 14 ~ 17V | 18 ~ 21V | 23 ~ 27V | 28 ~ 34V | 34 ~ 38V | 41 ~ 46V | 47 ~ 53V | 54 ~ 60V | 59 ~ 65V | |
| | | Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery | | | | | | | | | |
| ENVIRONMENT | OVER TEMPERATURE | 100℃ ±10℃ (RTH2) | | | | | | | | | |
| | | Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | | | | |
| | WORKING TEMP. | -40 ~ +70℃ (Refer to "Derating Curve") | | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80℃, 10 ~ 95% RH | | | | | | | | | |
| SAFETY & EMC | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 50℃) | | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | | | | |
| | SAFETY STANDARDS <small>Note.6</small> | UL8750, EN61347-1, EN61347-2-13 independent, J61347-1, J61347-2-13, IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1 | | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC | | | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH | | | | | | | | | |
| OTHERS | EMC EMISSION | Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3 | | | | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, heavy industry level (surge 4KV), criteria A | | | | | | | | | |
| | MTBF | 192.2Khrs min. MIL-HDBK-217F (25℃) | | | | | | | | | |
| | DIMENSION | 228*68*38.8mm | | | | | | | | | |
| | PACKING | 1.15Kg: 12pcs/14.8Kg/0.74CUFT | | | | | | | | | |

OPTIONAL: RASO SCREENS Opera model only



The OPERA model louvered roof Pergola® can be fitted with roll down RASO screens for extra weather or sun protection on all sides. This optional zipper screen system can be ordered with either mesh fabric or vinyl fabric and clear "film" windows for keeping moderate weather at bay during the winter months or rain during spring and summer months. If you only need sun protection on the sides or desire to keep mosquitos and pesky bugs at bay, our mesh screen fabrics can be utilized on the roll down shades as well.



Raso screens with windows



Raso zipper screens with mesh fabric

FABRIC:

Standard fabric is Ferrari 602 (Plus cost of actual windows optional).

Ferrari 502 vinyl (Upcharge)

Soltis 86 mesh (Upcharge)

SIZES:

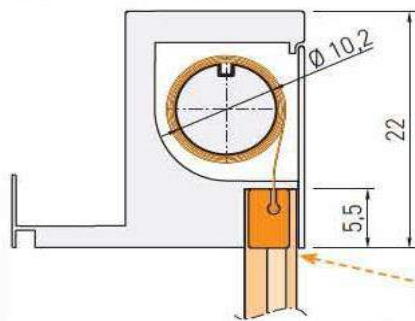
Max width per screen with mesh fabric is 600 cm (19'8")

Max width per screen with vinyl fabric is 450 cm (13')

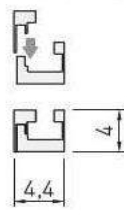
NOTE: If wider screens are needed, add an additional "Intermediary " post.

RASO SCREENS con't

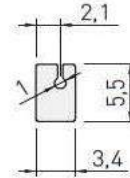
Opera supporting profile with built-in Raso



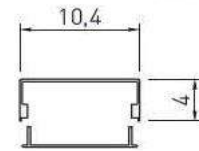
Zip guide profile



Front profile



Compensating profile

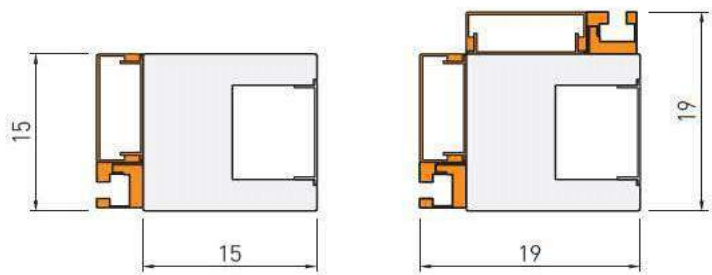


Should the Raso closure not be provided, the Opera profile will be completed with a special profile cover.



Optional Gasket at bottom of hem bar.

Post profile + Raso guide + compensator



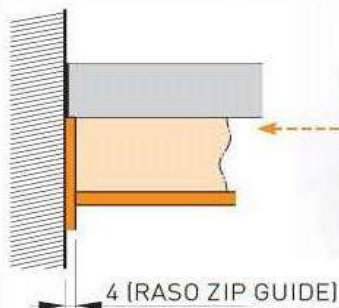
Paired Raso with additional upright



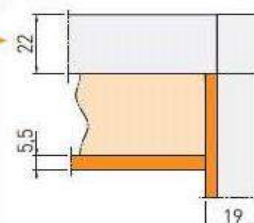
Raso intermediate on Opera post profile



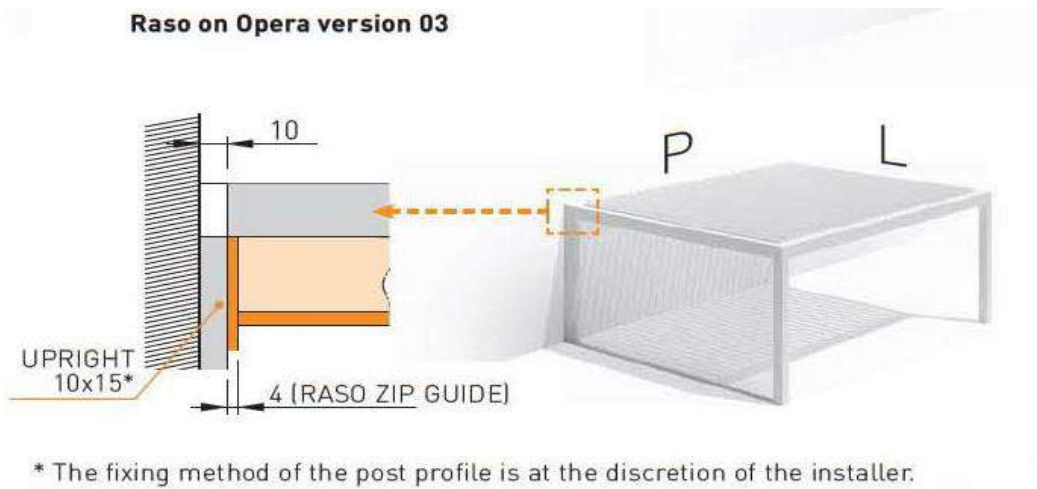
Raso on Opera version 02



Raso front view



RASO SCREENS con't



RASO SCREEN MOTORS:

Raso screens utilize an 525 altus SOMFY motor for each screen. These motors are tubular 110 volt motors and are integrated into the raso roller tube like a normal screen motor. Electrical wiring for the Raso screens is integrated within the gutter system and posts.



| Performances | 525A2 |
|--------------------|------------|
| Torque | 25 Nm |
| Nominal Voltage | |
| Rated Current | 1.6A |
| Speed | 20 rpm |
| Thermal Protection | |
| Radio Frequency | 433.42 MHz |

Telis 1 Screen remote control for motor. Use a Telis 4 remote to operate multiple screens.

Note: Raso screens utilize a separate remote control from the Louvered 24 volt motor and LED's which has its own remote controller.

Type of cable

RTS
120 V / 60 Hz
3 conductor cable



OPTIONAL LED LIGHTING

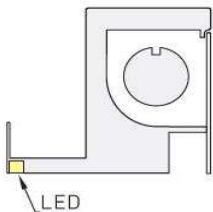


The OPERA & VISION can be fitted with remote controlled "perimeter" LED mood lighting RGB strips. The LED strips are available for the perimeter of the system only and can be multi colored or white only. You can have the system automatically change the color periodically, or keep it one color. The lights are dimmable to the desired brightness. These lights are controlled with the same remote as the louvered 24 volt



LED positioning

LED on depth side



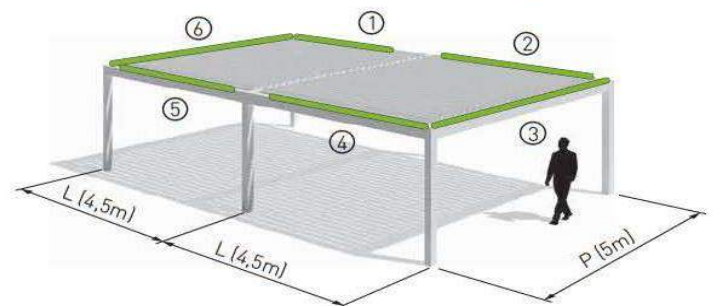
The LED lights on the depth side are integrated into the standard gutter profile.

Examples of LED configuration

- 1 22 m LED group (strips ①+②+④+⑤), switching on and dimming in common

- 2 10 m LED group (strips ①+② and strips ④+⑤), independent switching on and dimming of the 2 groups

- 4 5 m LED groups (strip ①, strip ②, strip ④, strip ⑤) independent switching on and dimming of the 4 groups



OPTIONAL SPOT LIGHTING



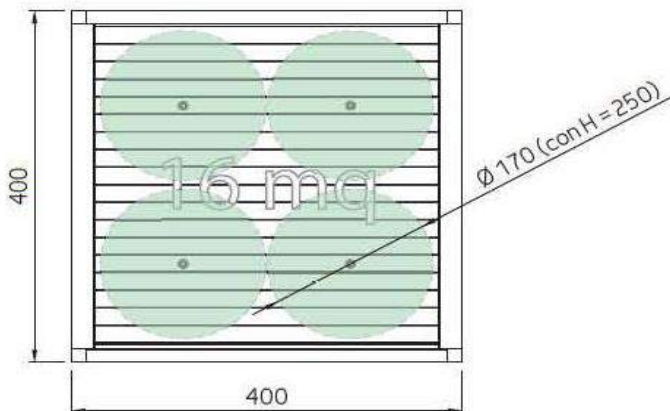
The OPERA & VISION can be fitted with white spot lights which can be added to the actual louvered strips where desired. The lights are dimmable to the desired brightness. These lights are controlled with the same remote as the louvered 24 volt

Opera and Vision can include a lighting system using SPOT LIGHT dimmer lights recessed in the blades wherever you wish.

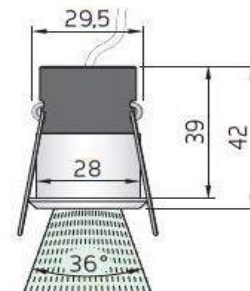
The spotlights must be ordered at the same time as the Bioclimatic structure. Full electrical hook-up, with wiring and spotlight installation will be done by Pratic.

CHARACTERISTICS

- LED 24 Vdc bulbs
- IP54 degree of protection
- 3000 K light colour
- Consumption: 4.5 W/bulb
- Light beam angle: 36°
- Light emission: 380 lm



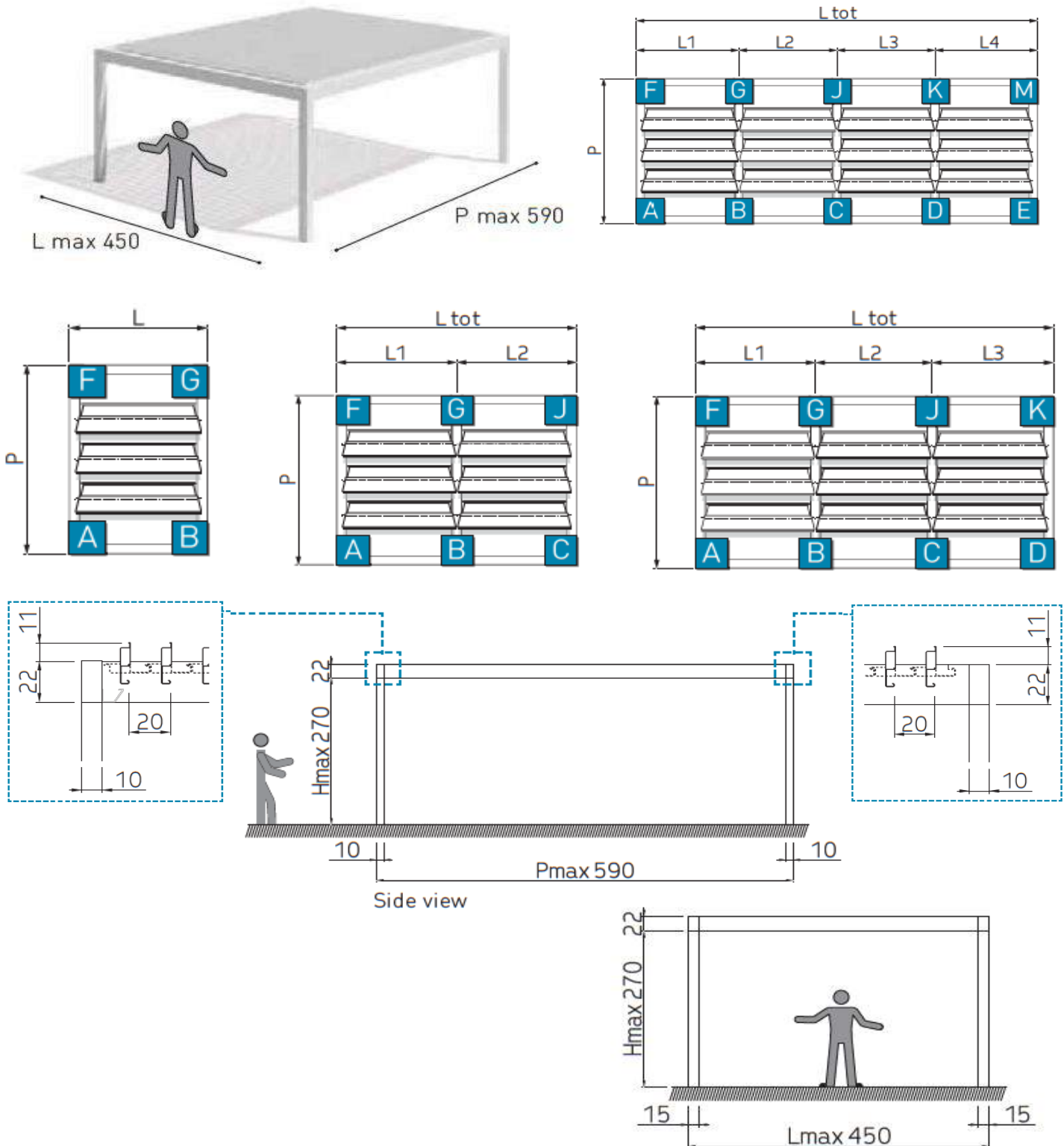
Example of light projection for Opera structures W = 400 D = 400 H = 250 with four spotlights



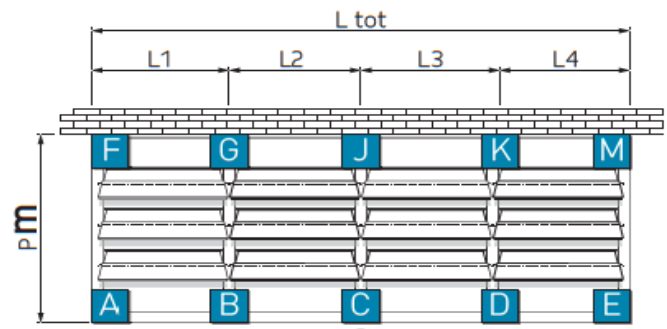
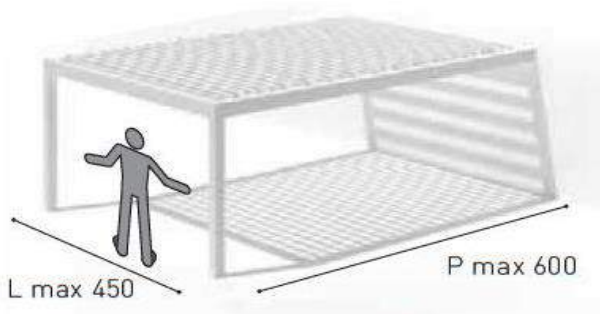
Detail of SPOT LIGHT

VISION MODEL

01L : Free standing and if multiple Coupled on projection side.

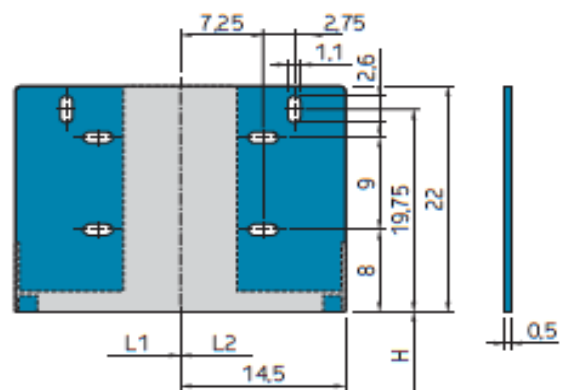
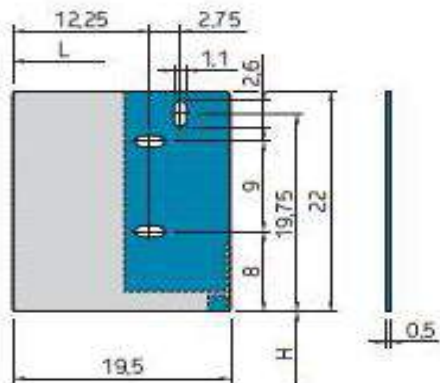
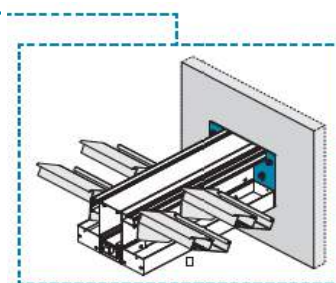
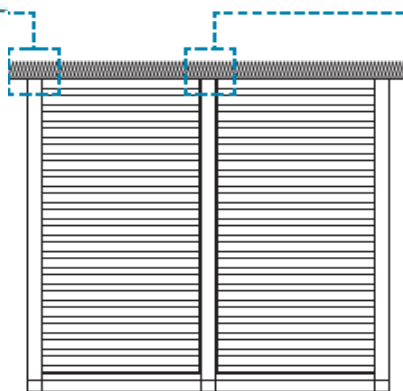
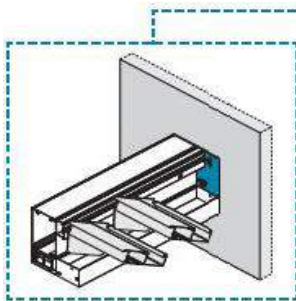
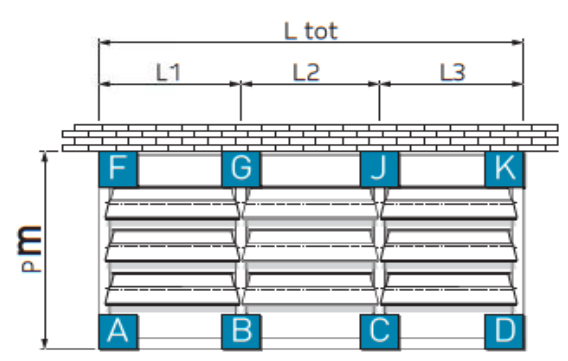
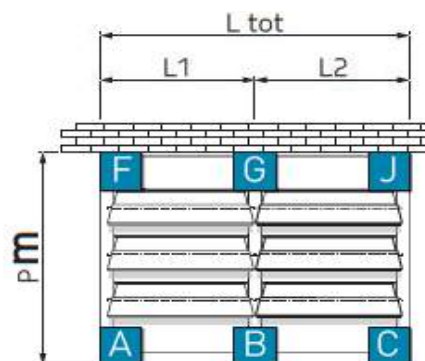
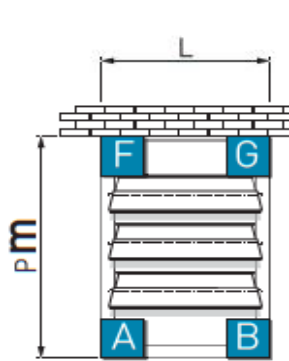


02L : Wall Mounted on width side "L"
If multiple Coupled on projection side.

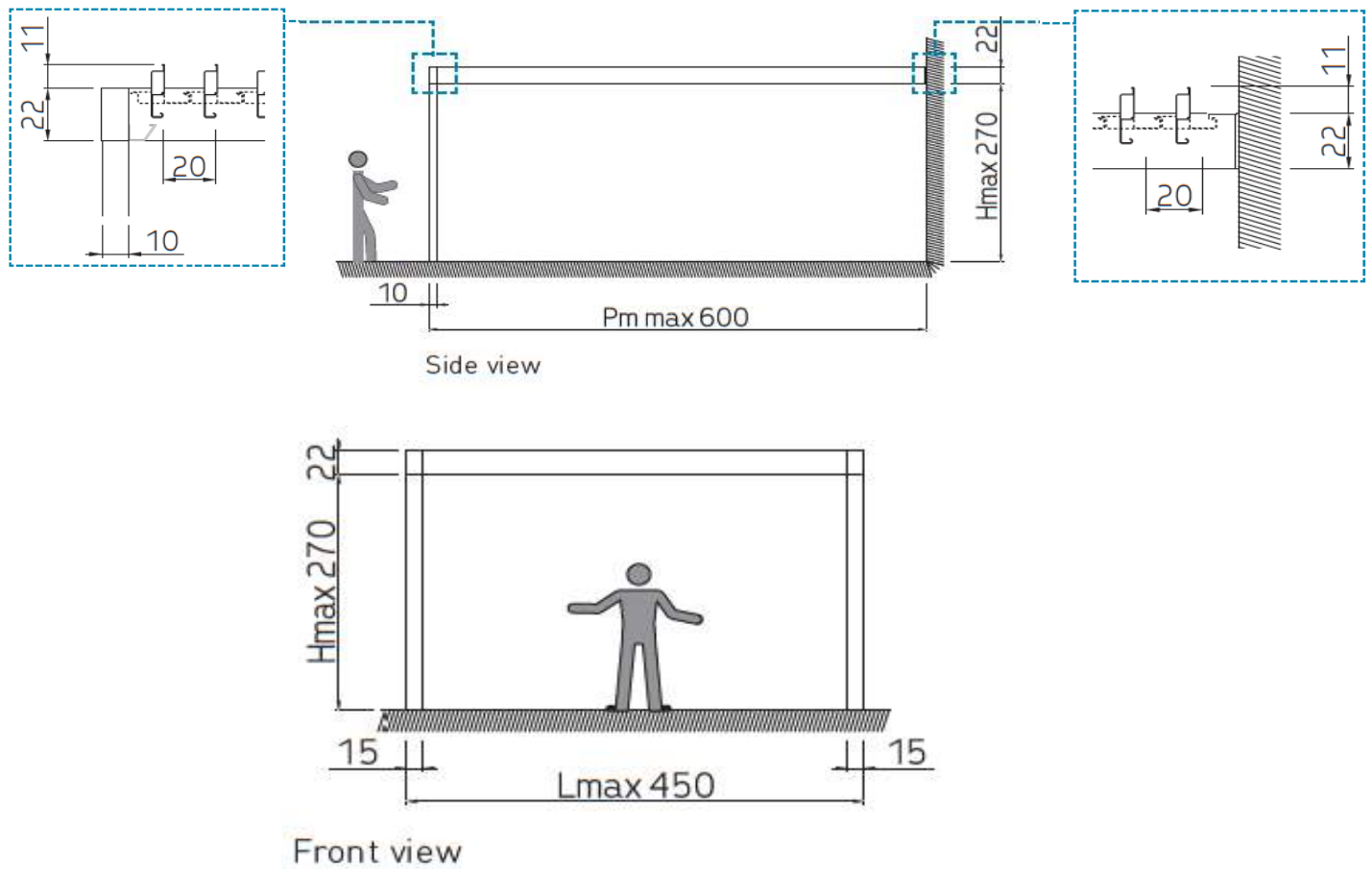


Max Projection 19' 8" (600 cm)

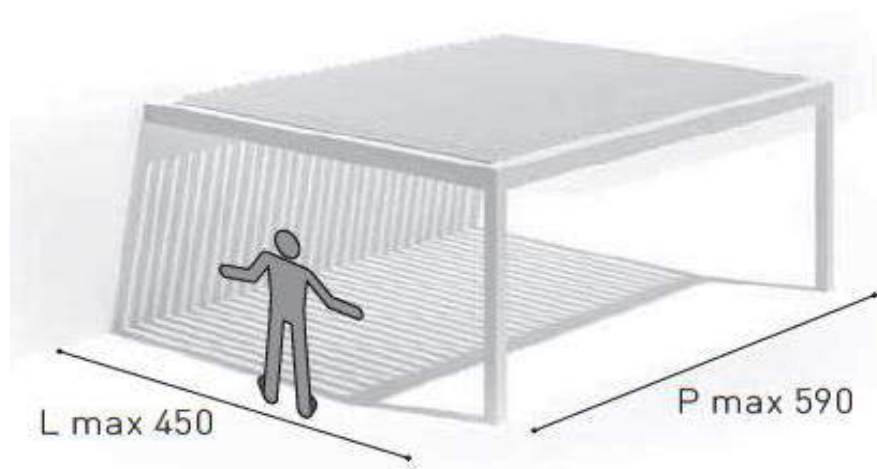
Pm = Wall depth



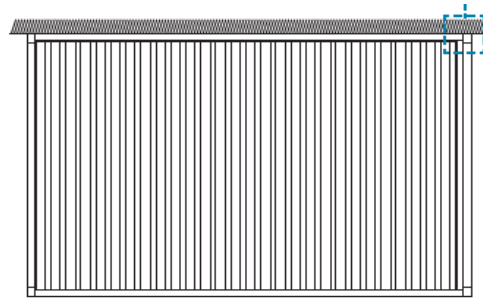
02L : cont:



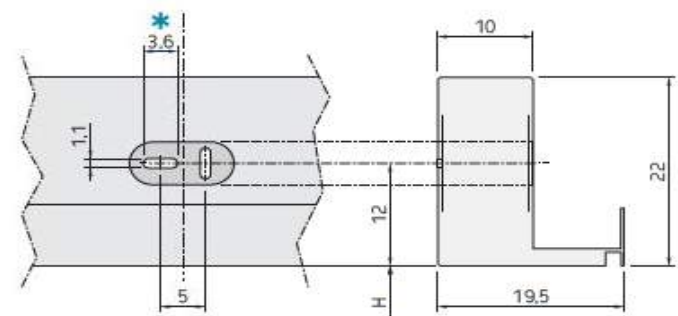
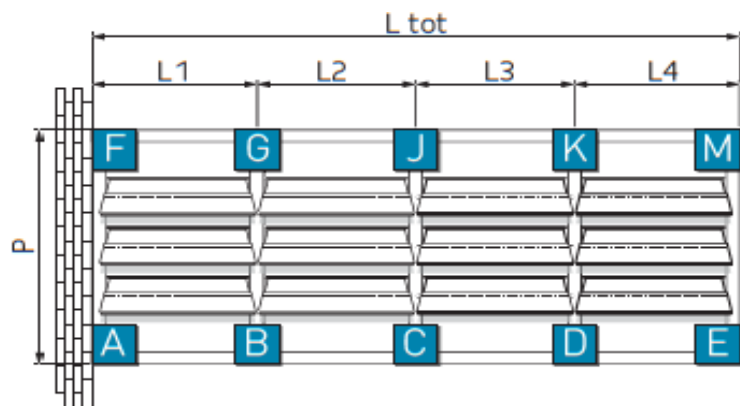
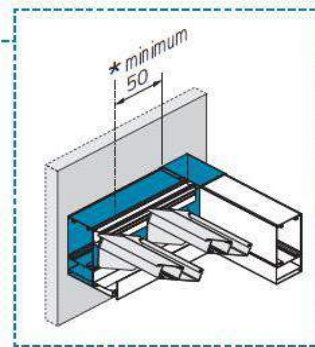
03L : Wall Mounted and if multiple Coupled on projection side.



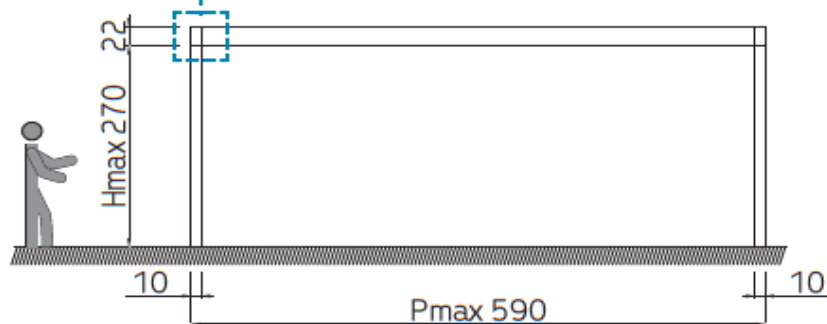
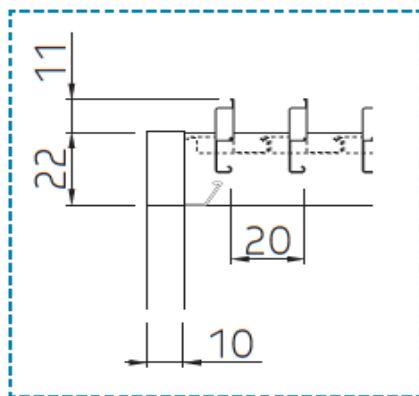
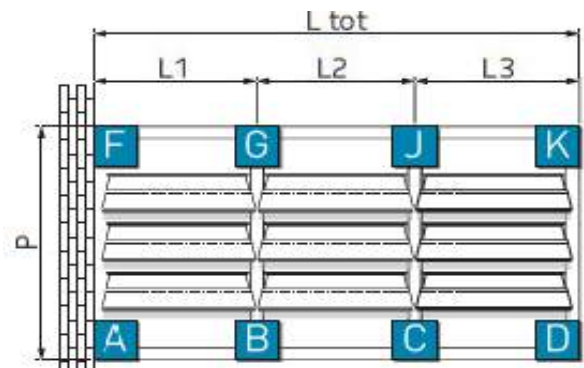
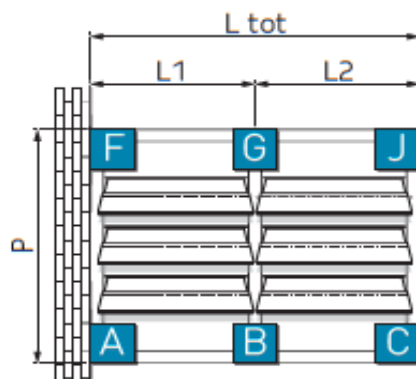
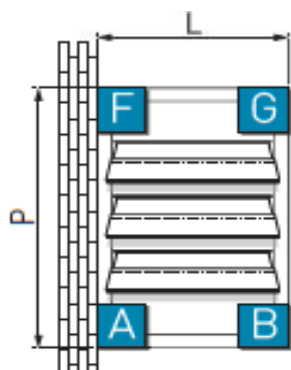
03L : cont:



Top view

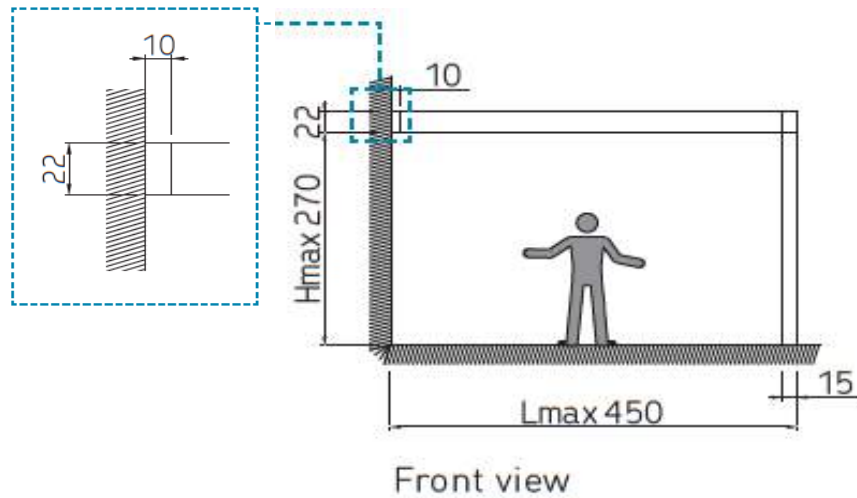


Wall mounting with profile



Side view

03L : cont:

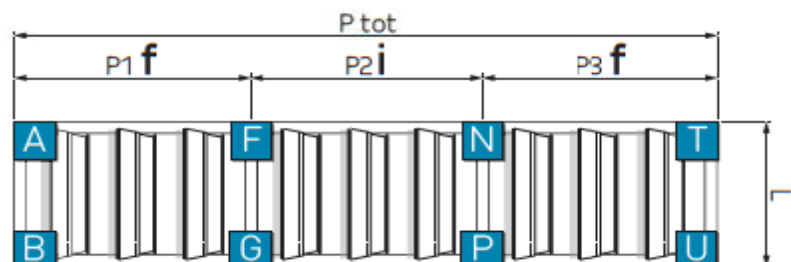
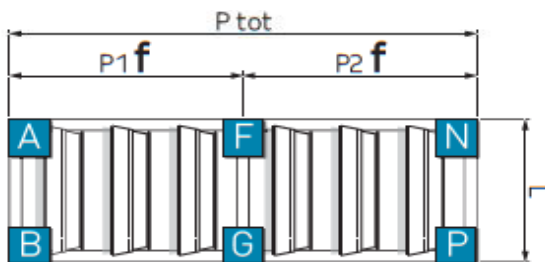
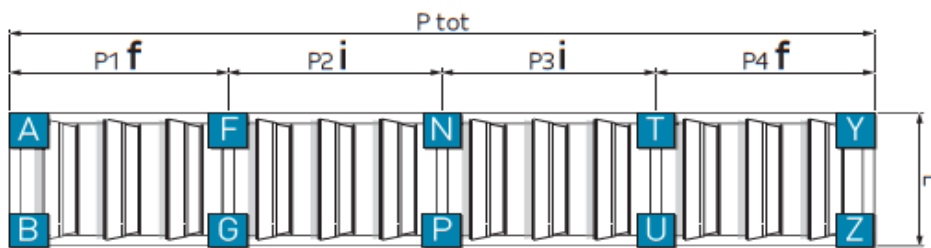
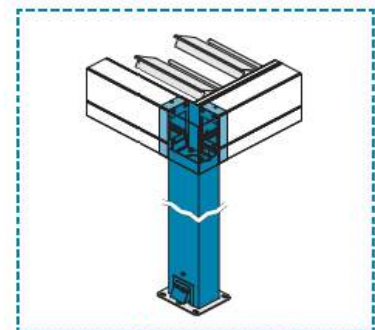


01P : Free Standing and if multiple Coupled on width side.

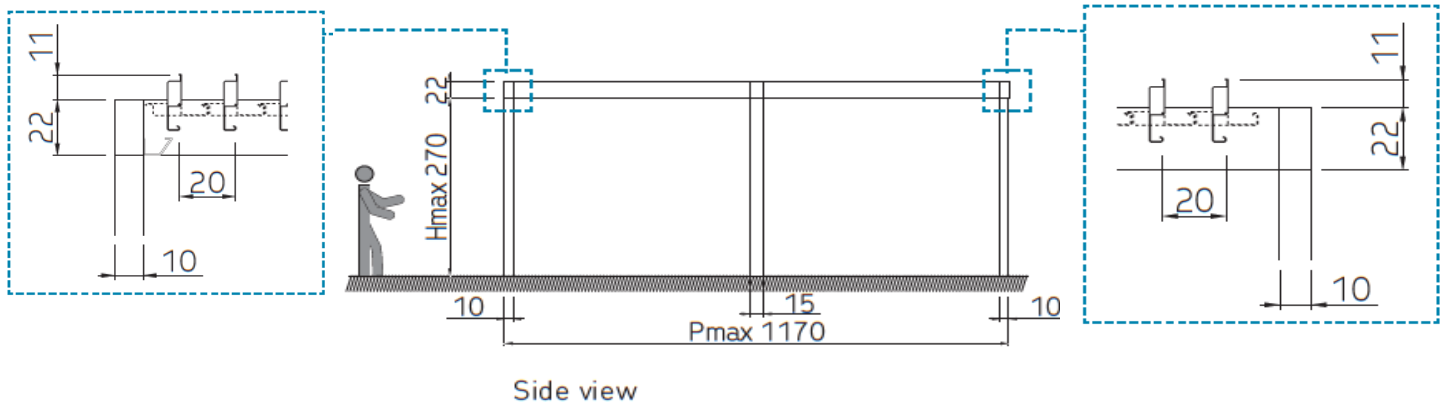


Pi = Intermediate module Projection side ($P_i = P - 10 \text{ cm}$)

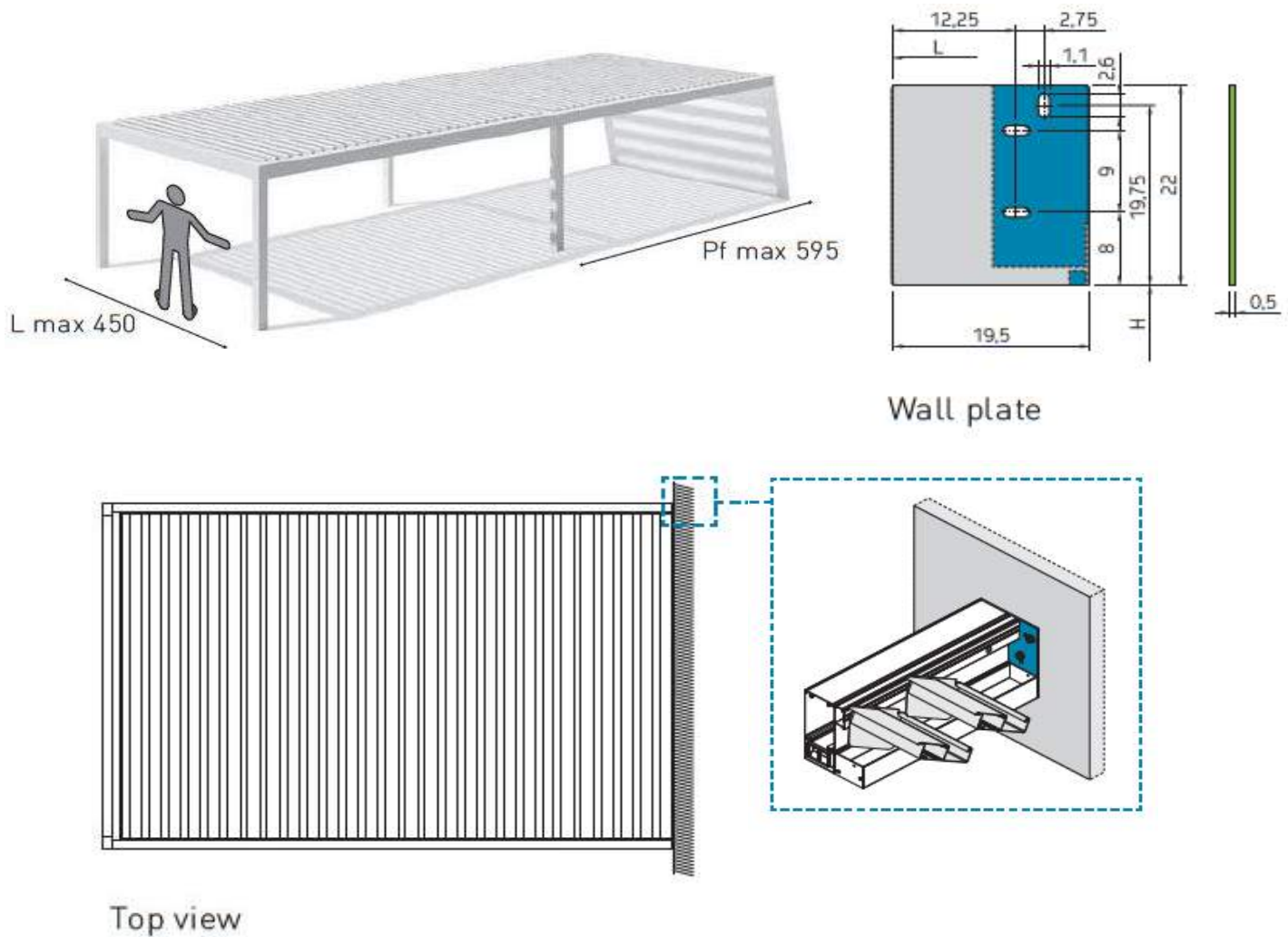
Pf = Final module projection ($P_f = P - 5 \text{ cm}$)



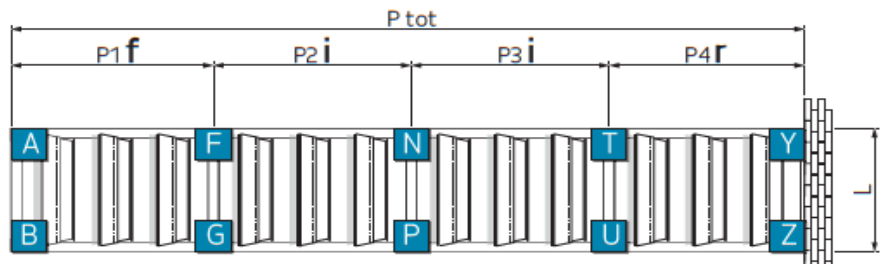
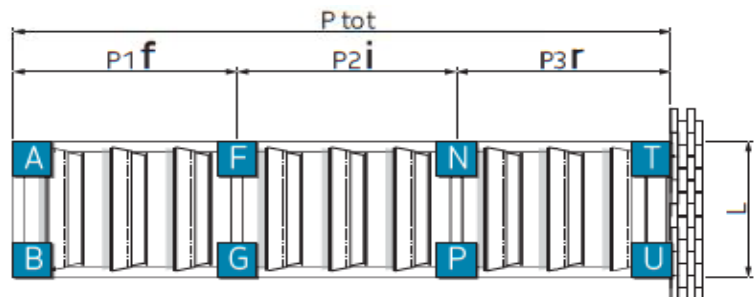
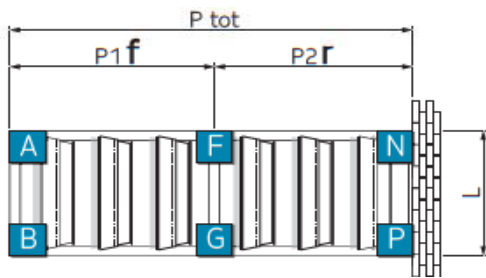
01P : con't



02P : Wall Mounted and if multiple Coupled on width side.



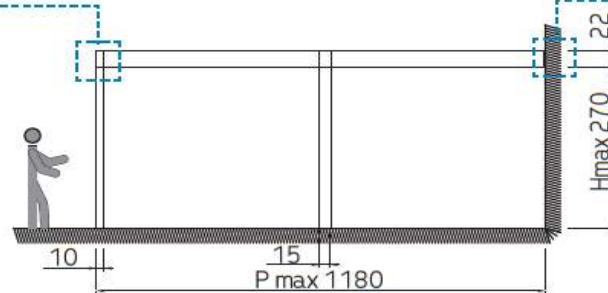
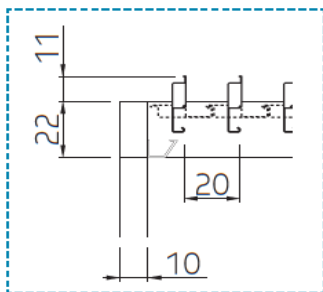
02P: con't



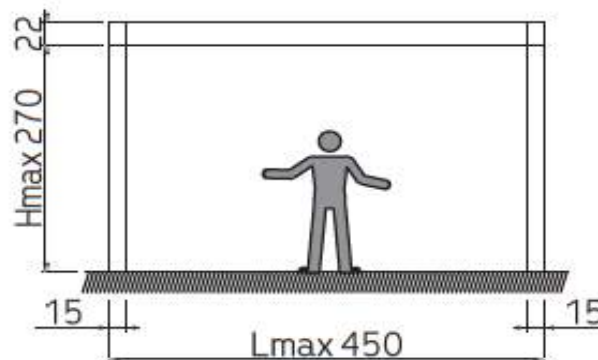
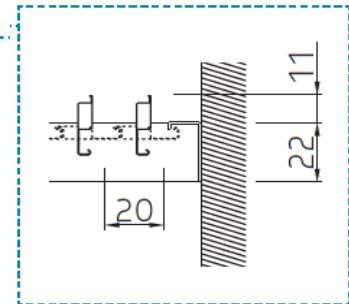
P_r = Reduced module projection ($P_r = P - 15 \text{ cm}$)

P_i = Intermediate module Projection ($P_i = P - 10 \text{ cm}$)

P_f = Final module projection ($P_f = P - 5 \text{ cm}$)

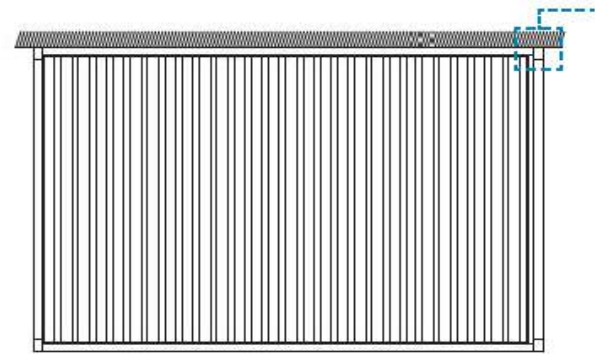


Side view

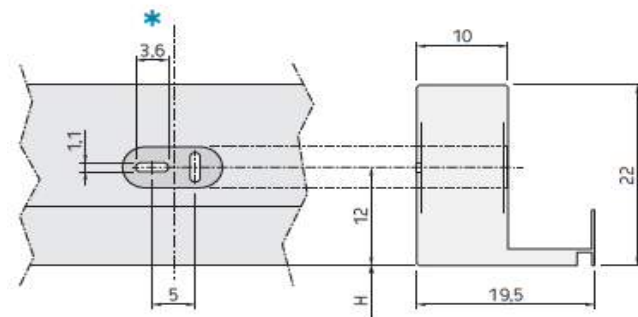


Front view

03P : Wall Mounted on side and if multiple Coupled on projection side.

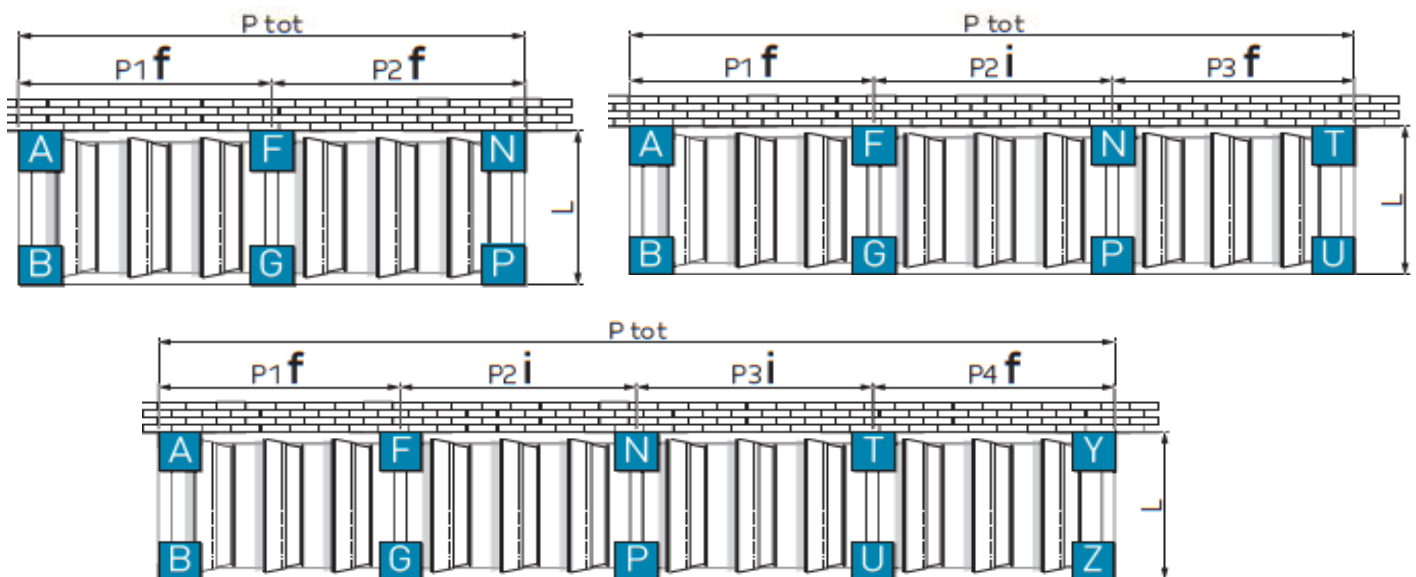
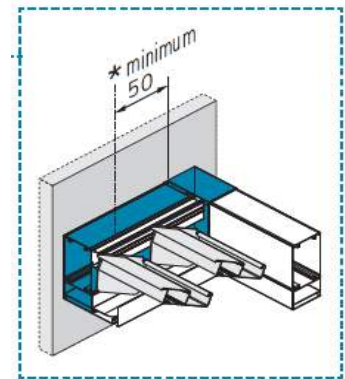


* For details on the location of machining for wall mounting, please contact our technical office.



Wall mounting with profile

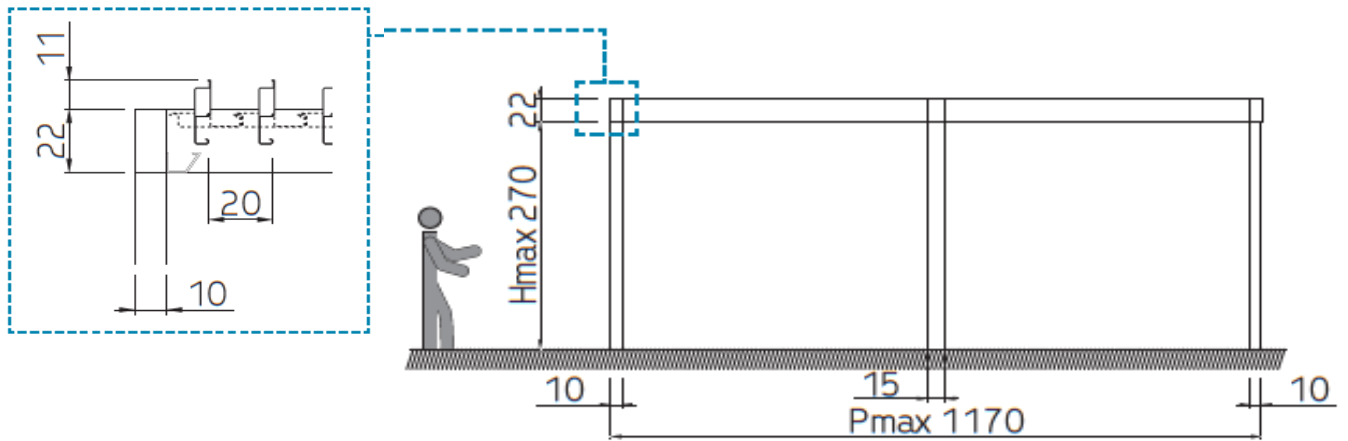
Top view



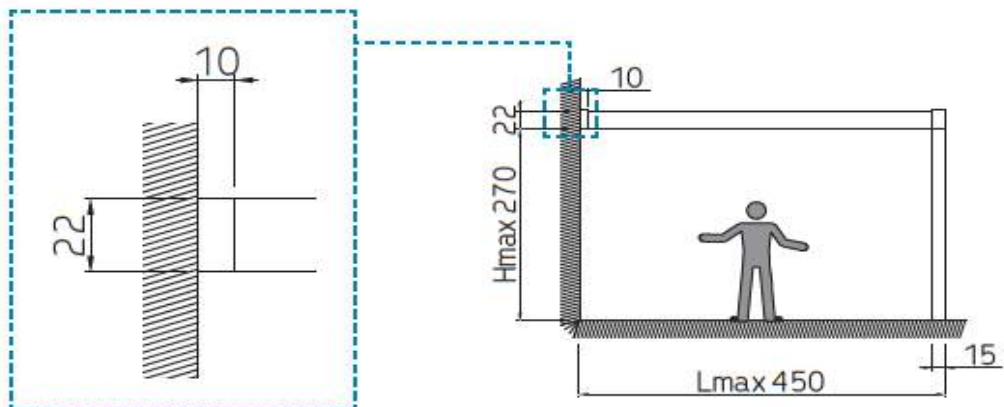
Pi = Intermediate module Projection ($P_i = P - 10 \text{ cm}$)

Pf = Final module projection ($P_f = P - 5 \text{ cm}$)

03P : con't



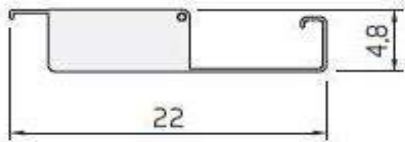
Side view



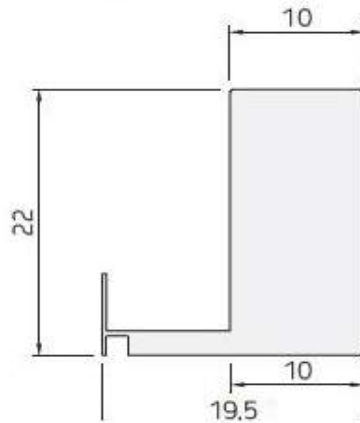
Front view

VISION technical details and dimensions.

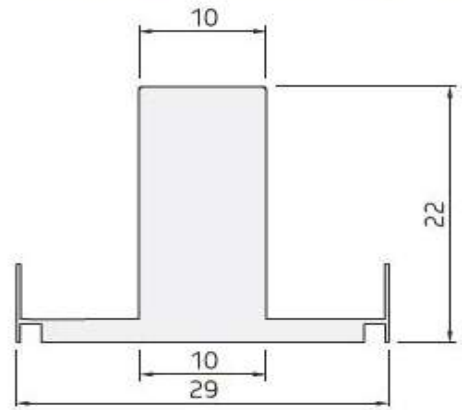
Blade profile



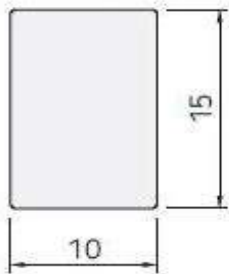
Vision supporting profile



Intermediate supporting profile

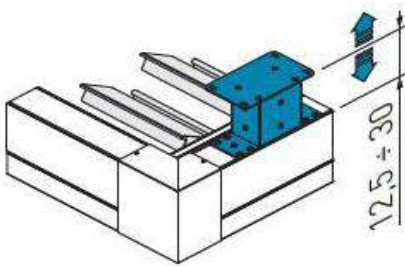


Vision post profile

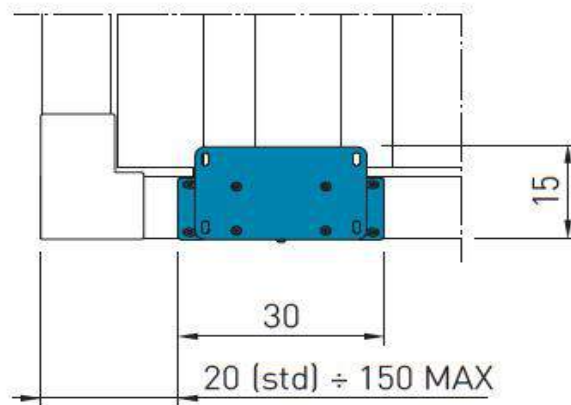


Standard posts height is 90" (230 cm).
Above 230 cm is an upcharge
Maximum available Opera post height is 118" (300 cm).

Ceiling mounting support

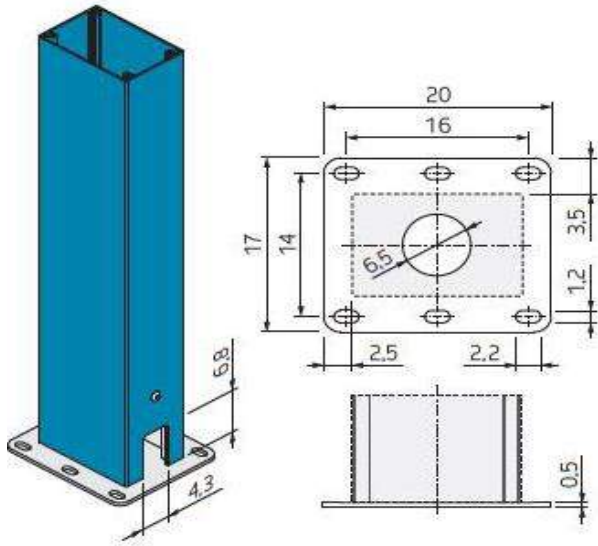


Ceiling mounts,
may be ordered to size
min 12.5 cm - max 30 cm

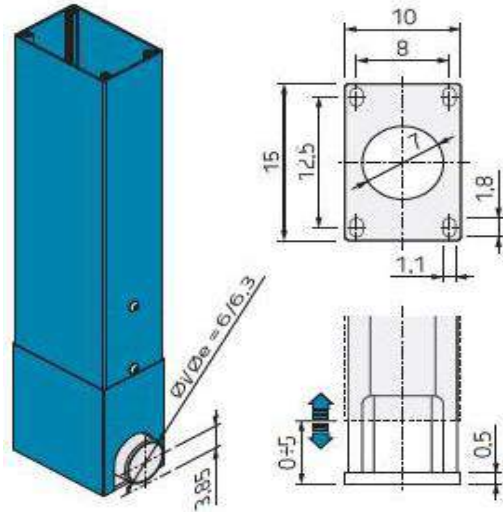


The optional corner supports can be installed around the perimeter, and minimum 20 cm from each corner up to maximum 150 cm from each corner.

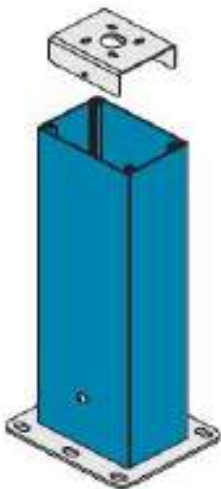
VISION technical details and dimensions continued.



Standard post feet. Standard height is 90" (230 cm). Above 230 cm is an upcharge
Maximum available Opera post height is 106" (270 cm).

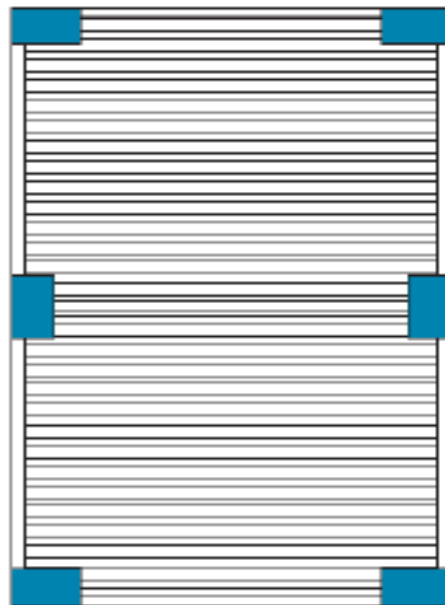


Optional telescoping feet up to 5 cm (2").
These are ideal on uneven surfaces and should be ordered if RASO screens are configured with the unit.



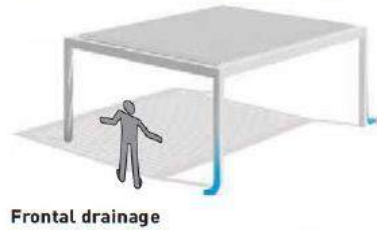
Additional posts with standard feet.

Vision post location diagram

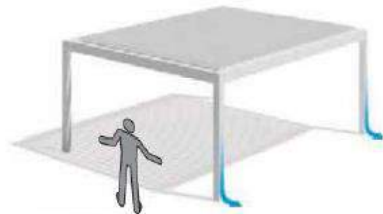
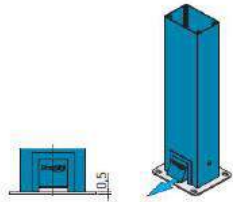


VISION water drainage details.

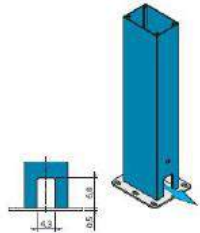
Vision with standard ground bracket



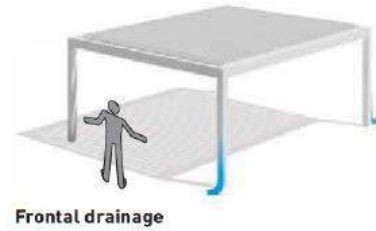
Frontal drainage



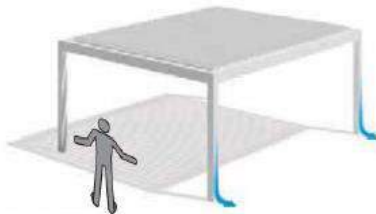
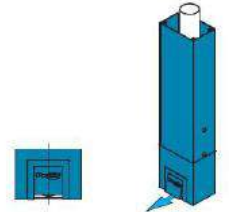
Lateral drainage



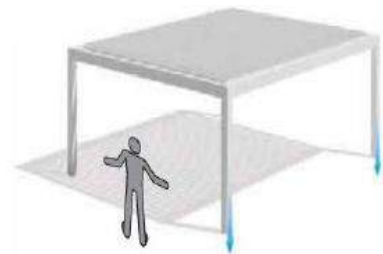
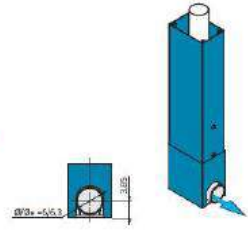
Vision with telescopic ground bracket



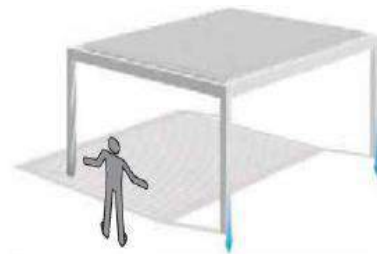
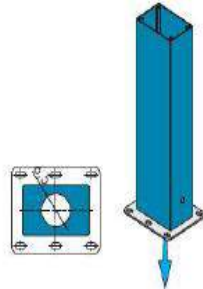
Frontal drainage



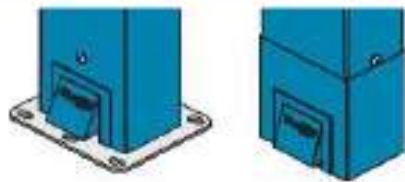
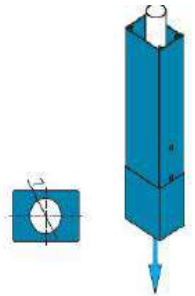
Lateral drainage



Floor drainage



Floor drainage



Scupper water discharge / flap is only available with standard post feet and can not be painted.

Note:

The OPERA and VISION product requires installation training at the Sunair facility in Jessup, MD. Sunair has staff available to help supervise the installation for an additional cost depending on availability at time of ordering.

For further information please call our Jessup office.



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P.O. Box 1068 7785 Rt. 175,
Jessup, MD 20794

JESSUP, MD 800 – 548 – 0408